Airfield Research Group Ltd

ARG Research Note No.7: Bristol Aeroplane Company Factory Weston-super-Mare
A Level II Record of 17 Buildings

Paul Francis and Graham Crisp – September 2015

Front cover: Building 87, the Dope Shop (later named Shop 6), c.1987
During WWII it was responsible for painting and camouflaging all the aircraft built at the Oldmixon and Banwell sites.

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Acknowledgements

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All photographs in this document are July 2015 unless otherwise stated.

The earlier photographs are courtesy ARG Archive

GLOSSARY AND ABBREVIATIONS

AA	Anti-aircraft
AIROH	Aircraft Industries Research Organisation on Housing
ARG	Airfield Research Group
ARP	Air-Raid Precautions
ATC	Air Training Corps
AMWD	Air Ministry Works Department / Directorate
BAC	Bristol Aeroplane Company
Bldg	Building
BOAC	British Overseas Aircraft Corporation (merged with British European Airways in 1974 to become British Airways)
Bofors	A Swedish (AB Bofors) designed medium-weight AA gun firing 40mm shells
CAG	Civil Air Guard
CRO	Civilian Repair Organisation
det	detachment
DH	de Havilland Aircraft Company
FDS	Factory Defence Section
ft	feet
HAA	Heavy Anti-Aircraft
HQ	Headquarters
in	inch
LAA	Light Anti-Aircraft
Lorenz	A pre-WWII blind-landing system invented in Germany and operating on VHF. It was later manufactured under license in the UK by Standard Telephones & Cables as the Standard Beam Approach and was largely a disaster.
LZ	The (Low Zone) barrage balloon was 62ft long and 25ft in diameter. It usually flew up to 5,000ft to protect installations from attack by dive-bombers or low-flying aircraft.
MAP	Ministry of Aircraft Production
MoT	Ministry / Minister of Transport
N/A	Not applicable
NGR	National Grid Reference
O/R	Other ranks, i.e. military personnel who are not commissioned officers
'Q' site	Decoy installation intended to draw enemy bombing away from towns, airfields, factories etc.
RAFM	Royal Air Force Museum, Hendon NW9 5LL
Rhyne	A drainage ditch, or canal, used to turn areas of Somerset wetland at around sea level into useful pasture.
Robin	A small 44ft-span hangar typically found on aircraft supply units. A significantly larger version, the Super Robin (60ft-span) was produced in two very different versions and often used at aircraft factories.
RSJ	Rolled Steel Joist
SMD	Structural and Mechanical Development Company
TDU	Torpedo Development Unit
TNA	The National Archives, Kew, Richmond, Surrey, TW9 4DU
VHF	Very High Frequency
VP	Vulnerable Point – a military objective which needs protecting from a potential enemy attack
WOFO	War Office, False Origin. The Cassini Grid system used by the military during WWII
WWII	The Second World War
XTV	Experimental Test Vehicles, Project 12-20 evolved into the Bristol-Ferranti Bloodhound missile

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Part 1: Introduction and Notes on Sources

1.1 Introduction

Between 11 and 13 July 2015, a rapid survey and field investigation was undertaken by Paul Francis assisted by Graham Crisp of an area that was constructed during the Second World War and which partly functioned as the Oldmixon shadow factory site of the Bristol Aeroplane Company Ltd at Weston-super-Mare.
The centre of the survey area is ST 33892 59480

The report covers 17 buildings and structures within the survey area which is the northern section of the former factory. The boundary between the two halves of the factory site, which is in divided ownership, is the Cross Rhyne, a main outfall drainage gulley.[1] The survey made use of rapid walkover methodology with photography and note taking, plus desk-based research as well as report compilation. It was possible to access all buildings, but only with part access to three and no access to one.

The fieldwork and research standard is equivalent to English Heritage (now Historic England) Level 2, as defined in *Understanding Historic Buildings (2006).* The weather on the days of the survey alternated between being exceedingly hot with strong sunlight casting dark shadows, to constant rain and dense cloud cover. Basic measurements were taken where it was possible to get internal access to buildings.

National Grid Reference numbers were compiled from visiting the online website '*Where's the Path'*:
http://wtp2.appspot.com/wheresthepath.htm.

A search was made, resulting in a visit to The National Archives (TNA) at Kew to examine their relevant files and documents.

This report is not a history of the aerodrome or factory site, however background information is included here by way of context. There is an extremely well-researched history published by Amberley, (2010), called '*Weston-super-Mare and the Aeroplane'* by Roger Dudley and Ted Johnson (ISBN: 978 1 84868 221 4).

1.2 Notes on Sources

A search at TNA has proved beyond reasonable doubt, that there are very few preserved archives relating to the shadow factory at Oldmixon, either from a factory construction or production aspect. This absence is not solely restricted to the shadow factories organisation with respect to the Bristol Aeroplane Company as other 'parent' companies are similarly poorly covered.

There are however, significant archives relating to the pre-war and wartime production of Bristol aero engines, both at Filton and elsewhere, but very little concerning airframes. There are significant technical files on the Beaufighter and the problems with manufacture, but very little on production at the factories.

As far as the pre-war airport goes there are a few significant files preserved at TNA, most of this concerning the period after the takeover of Norman Edgar (Western Airways) Ltd by the Straight Corporation and the outbreak of war. There is also a significant amount of information available from the online resource *Flightglobal* covering all aspects of the history of the airport from 1933 when the *Flight* journal did a survey of municipal authorities interested in having an aerodrome, prior to the outbreak of war.

The military units based on the airfield during the conflict are also fairly well covered as is the Weston-super-Mare balloon barrage and the light and heavy anti-aircraft units stationed in the district. However the war diaries themselves are fragmented, incomplete and difficult to digest.

[1] The Cross Rhyne actually splits just to the east of the factory with the major part running south of all the buildings. This became known as the Main Storage Rhyne, and the northern route which bisects the factory as the Carrier Rhyne. The two parts rejoin to the west of the site.

Plate 1: Heating pipe gantry where it rises over an access road over the Cross Rhyne

Plate 2: One of the original access gates to the factory site

Part 2: Historical Overview of Weston-super-Mare Airport

2.1 Employment Expansion and Contraction 1934 – 50

2.1.1 Bristol

Prior to the beginning of rearmament in 1934, Bristol's rate of development was very similar to that of the rest of the country. Its population was growing at a rate a little faster than that of other cities and the level of unemployment was similar to the national average. When rearmament started, unemployment fell well below the national average and migrants were drawn to the area at the rate of 1,700 a year from 1934 to 1938. The reason for this was mainly the expansion of the city's aircraft industry, namely the Bristol Aeroplane Company (BAC).[2] Their main factory was located at Filton just outside the northern boundary of the Bristol County Borough and about four miles from the city centre. In 1935 the company was employing 4,100 but by 1939 this had increased to 21,400.

The outbreak of war naturally accelerated the company's expansion and simultaneously the workforce in the other engineering industries in the area doubled. Employment in the engineering and aircraft group of industries rose from 32,400 in 1938, to 68,800 in 1943. This was partly due to the movement of labour from the consumer goods industries and consumer services in Bristol, also by drawing labour into the city from other areas, but in addition by employing women.

The two main wartime centres in the south-west for BAC were therefore Bristol and Weston-super-Mare, which are 21 miles apart, and in 1950, the journey there and back took 1.5 hours by train and 2.5 hours by bus. The civilian population of Weston in 1950 was 76,200 and that of Bristol was 661,000 (including Bath).

2.1.2 Weston-super-Mare

In 1938, Weston-super-Mare and neighbouring Clevedon consisted of two seaside resorts and the rural districts surrounding them. There was very little in the way of manufacturing. During the Second World War BAC operated government factories at Oldmixon and Banwell (the former factory was about two miles to the south-east of the town) with a peak labour force of 3,000. Mainly as a result of this, employment in sub-contracting engineering and aircraft rose from 300 in 1938 to 5,100 in 1943. (In June, BAC employed 27,300 at Filton and 2,400 at Weston-super-Mare). This was achieved partly by bringing in a workforce into the area – the population over the period increasing by 1,300. Furthermore, there was a certain amount of contraction in other industries, notably in construction, distribution, and the hotel and catering trade.

2.2 Pre-War Aerodrome Operations

The town council had expressed an interest in having an aerodrome in 1933 thanks to the enthusiasm of Norman Edgar of Norman Edgar (Western Airways) Ltd – in January he had flown a group of councillors to view the site of a proposed airfield at Hutton Moor. This reconnaissance flight led to the council buying 52 acres of land from Somerset Council and 26 acres from landowner AE Lance. By October of that year, 16 towns had licensed aerodromes, 5 had purchased sites, 8 had reserved sites in their town planning schemes, 94 had already had sites inspected and 65 had displayed an interest.

A ten-year leasing arrangement was drawn up between the town council and Norman Edgar. Drainage and the laying out of the landing ground then took place under the guidance of the town's engineer, while in the south-east corner a hangar was erected by John Lysaght Ltd and a second-hand wooden building was used as a passenger terminal. Even while the aerodrome was still unfinished, the company offered an hourly service between Cardiff and Weston, also Weston–Bristol (Whitchurch)–Cardiff as well as a twice-daily service between Birmingham and Weston. Western Airways carried 2,496 passengers in June, 3,149 in July,

[2] The company has a history dating back to the pioneer days of aviation, having begun operations under the name of British and Colonial Aeroplane Company Ltd in 1910, being founded by Sir George White and his brother Samuel White, the owners of Bristol Tramways Co. In 1920, British and Colonial was liquidated and its assets became Bristol Aeroplane Co Ltd. BAC manufactured both aircraft and engines.

and 2,393 in the first week of August 1936 with four de Havilland Dragons operating in tandem, carrying six passengers each. By January 1937 no fewer than 18,738 fare-paying passengers had passed through the airport which made it one of the busiest provincial aerodromes in the country.

On 18 October 1938, Norman Edgar (Western Airways) Ltd came under the control of the Straight Corporation Ltd and to reflect this, its name changed to Western Airways Ltd. Weston airport was then added to the Straight chain of aerodromes.[3] The popular Weston – Cardiff service had carried over 30,000 people in 18 months and passenger fares were reduced to 6s 6d single and 9s 6d return or a book of 12 return tickets could be bought for £5. These were considerably lower than the third-class rail fare and the journey took only eight minutes which compared favourably with the 2.5 hours rail trip.

Plate 3: Control tower, (Bldg.53), as seen in September 1982

In October 1938, the town borough approached the Ministry of Health to borrow £3,270 for the purchase and installation of night-landing lighting at the airport; this was primarily for the night-flying service between Weston and Cardiff which had been inaugurated on 1 October. Chance Brothers of Smethwick then supplied aerodrome lighting at Weston. This included a 4.5kW triple-lamp floodlight with shadow bar, constructed in front of the new control tower together with an illuminated landing direction indicator. Boundary lighting and obstruction lighting was also installed, powered by an engine-driven generator. All this was operated from a control desk in the tower.

The purpose of the floodlight was to illuminate the entire landing area at night. In front of each of the three 1.5kW projectors was a swivelling narrow vertical strip. These strips were connected together by levers and it was the job of an operator to move these strips as an aircraft landed to cast a shadow on the aircraft itself. This avoided blinding the pilot whilst keeping the landing ground illuminated.

In 1938 the Maybury Committee report on the future of civil aviation recommended that two direct telephones were installed between Weston and Bristol airports (one was already in place at a rental of £116 per annum). In addition a teleprinter was required with three staff to man between the hours 07.00 to 22.00. Finally a Lorenz VHF approach beacon system should be installed. The onset of the Second World War resulted in certainly the latter and possibly other measures not being implemented.

[3] American Whitney Willard Straight attended Trinity College Cambridge and later formed the Straight Corporation who built and developed airports. Becoming a British citizen he joined the RAF in 1939 and retired as an Air Commodore before becoming managing director of BOAC.

Plate 4: The wooden control tower still operational in September 1982

Plate 5: Control tower – view looking south-east, September 1982

The control tower is rumoured to have been built partly from a second-hand taxi cab rank at a cost of £163, which was paid for out of the money loaned from the Ministry of Health!

Plate 6: Control tower– interior view, September 1982

Plate 7: Station offices, canteen and officers' mess, (Bldg.5) – view of the entrance elevation, September 1982
This was formally the passenger terminal building.

Plate 8: The Veranda Café area of Bldg.5 – viewed from the aerodrome side, September 1982

Plate 9: The original hangar, (Bldg.2), September 1982

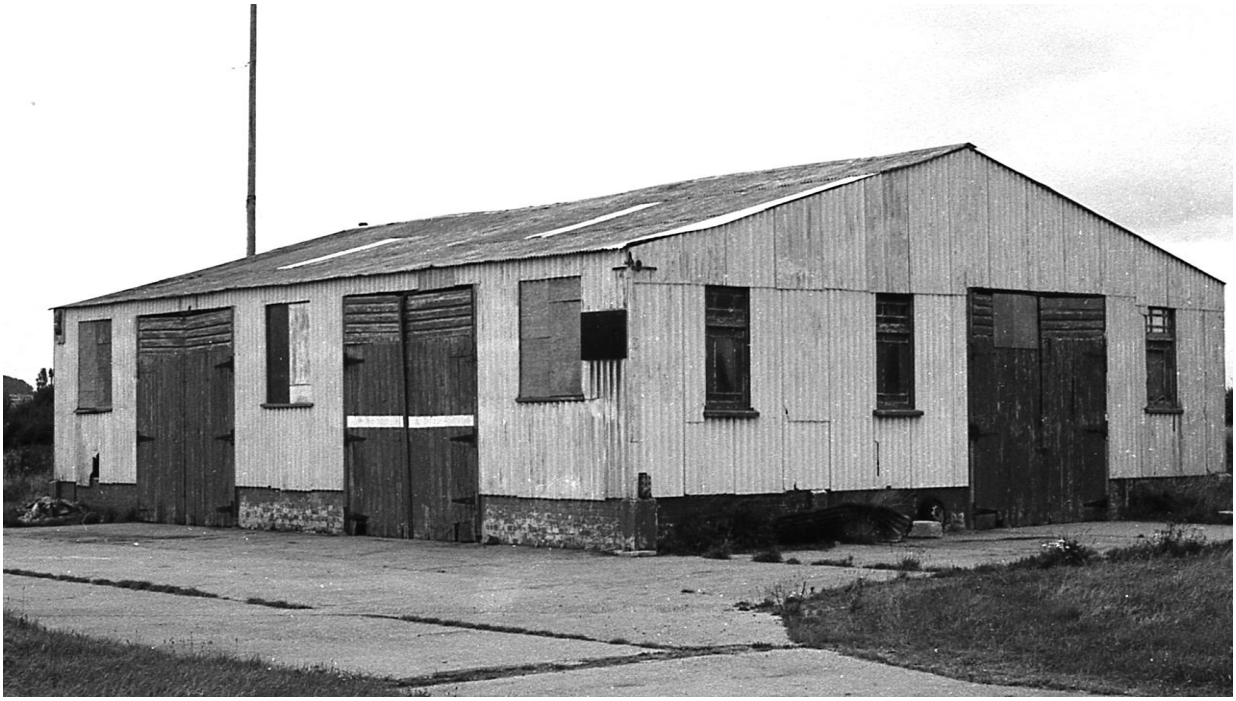

Plate 10: Torpedo Development Unit detachment, bomb store shed, (Bldg.58), September 1982

2.3 1938–1940

In July 1938, Air Minister Sir Kingsley Wood announced details of a new national organisation that had been set up to provide cheap flying tuition and which then came into being on 1 September. This was known as the Civil Air Guard (CAG) and was open to any person between the ages of 18 and 50 who had undertaken a 'reserve' liability in any of the three services. The 1937 Air Ministry grant of £25 for new pilot members was increased to £50 on obtaining their 'A' Licence trained on standard training types of aircraft, or £30 for lighter types. This meant that CAG members paid only 10s per hour at weekends, and half that during the week on standard training aircraft.

After the declaration of war, Western Airways came under the control of the Civilian Repair Organisation (CRO) to carry out repair and overhaul of military aircraft which also led to an expansion in its workforce.

The Straight Corporation's architects Robert Hening[4] and Anthony M Chitty had been commissioned to design modern airport terminal buildings of standard form at Ipswich and Exeter, based on units of steel framework which could be extended on three sides or above, so that future storeys could be added or extensions built at ground level. At Weston progress was slow because of disagreements with the council around the cost of the two-storey terminal building.[5] Like those at Exeter and Ipswich, this would contain a pair of squash courts, lounge, dining room, kitchen, club rooms as well as accommodation for the pilots. It would have been built in front of the existing passenger terminal building which by now had been converted into offices.

On 29 November 1938, the Ministry of Home Civil Aviation approved the erection of the new terminal building and hangar to heights not exceeding 36 feet.

At the end of January 1939 discussions took place between the Borough Engineer, HA Brown and the Air Ministry on revised aerodrome layouts – the preferred option involving the new 1,300-yard runway moving further south in order to avoid an area of low-lying land which would have involved considerable expense for drainage and filling. An inspection took place on 12 January and the new aerodrome license was issued on 30 January 1939. The existing grass runways were extended through compulsory purchase.

As it turned out events, in Western Europe intervened and no construction work on the terminal building took place. The Air Ministry did partly fund the construction of a new hangar to the design of Hening and Chitty which was similar to one at Exeter, and this was erected during February 1939, and included a range of workshops. Accommodation for the staff and pupils of No.39 Elementary and Reserve Flying Training School was in the form of temporary buildings erected alongside Laneys Drove. The school had opened on 3 July but was disbanded on the outbreak of war.

Plate 11: Hening and Chitty hangar, (Bldg.1), September 1982

[4] Robert Hening MBE is sometimes spelt 'Henning', in particular by journals (*Flight*) of the time

[5] The Ipswich building started out as single storey, while the Exeter one was two storey from the beginning. Another storey was then added to Ipswich and the Weston building would have been built two storey.

It was replaced by No.5 Civil Air Navigation School (later No.5 Air Observers Navigation School), which briefly operated Avro Ansons on exercises over the Bristol Channel before leaving for South Africa on 22 August 1940, although all maintenance personnel transferred over to BAC. It was then replaced on 7 September by the de Havilland Tiger Moths of No.10 Elementary Flying Training School from Yatesbury. Weston was a lot smaller than Yatesbury so the number of pupils had to be reduced. Defence personnel and pupils were at first accommodated in huts and tents out on the aerodrome but later pupils were housed in Manilla Crescent in the town. The unit also took over operation of the 'Q' site (C86) at Bleadon on South Hill Farm near the River Axe at ST 310 567.

On 3 January 1941 at around 22.00 hours the town was heavily attacked by enemy aircraft and the duty officer ordered the 'Q' fires to be lit, but the switches operating the fires from the dugout failed to work and the airman on duty (AC2 Cecil FM Bright) proceeded to the dummy buildings and ignited them by hand. As soon as the dummy fires had been started the enemy switched its attack from the town to the site. The following day the 'Q' site was inspected and many bomb craters were found in close vicinity. Bright was recommended for the award of Military Medal which he received on 7 March 1941.

2.4 Defence of the Vulnerable Point

2.4.1 Barrage Balloons

As early as October 1940 the practicality of providing barrage balloons for the protection of the Oldmixon factory was under discussion at HQ Fighter Command; it was decided that the defence of the factory site should take priority over training and the school should be moved as quickly as possible. The proposal was to move it to Stoke Orchard, (north of Cheltenham, Gloucestershire), but this airfield was still under construction. As an interim measure, it was agreed that balloons could be lowered during daylight hours until the 10 Group controller considered that the movement of enemy aircraft as presented on his operations table constituted a threat to the factory.[6] Accordingly 955 Squadron reformed at Cardington as a mobile unit on 18 February for eventual deployment to the Weston district, which it did on 3 May with three flights of 24 LZ-type balloons. In May BAC requested that the barrage be extended to include Banwell, which at the time was still under construction; it is understood that this was not possible as it would require the purchase of extra balloons.

On 26 September the final 13 out of 54 school aircraft were flown to the unit's new station at Stoke Orchard. Balloons were then flown at all times – all visiting pilots would have to land at Weston Zoyland unless they were granted special permission to land at Weston-super-Mare – a 'Navigation Warning' was issued to reflect this. It is unknown when the barrage was lifted.

The January 1941 authorised squadron headquarters was at Banwell Castle, a nearby Victorian Mansion. Flight headquarters were at:

- 'A' Flight at St Maur's Hotel, Clevedon Road and additional accommodation at No.4 Clevedon Road
- 'B' Flight at Bank Stores, High Street, Worle with additional accommodation at No.3 High Street
- 'C' Flight Locking Vicarage and additional accommodation in vacant house, Plot 5, Rectory Farm Estate, Locking.

The map shown on the next page shows the deployment (after some adjustment), while another one after some re-organisation in March 1943 was laid out with 20 balloons to create lanes or corridors to the runway for the use only of test pilots or others who were constant visitors to the aerodrome. Everyone else was forbidden to land while the balloons were flying and had to land at Weston Zoyland, 15 miles to the south.

The 1943 reorganisation involved re-siting of wooden huts (15ft × 30ft) from some of the abandoned balloon sites (55/3, 55/4, 55/20, 55/22) to the HQ site plus a Nissen hut from 'B' Flight HQ. The latter was partitioned for use as an armoury, parachute packing and gas-clothing store.

[6] The training unit started operating 07.00 hrs until 21.00 hrs in summer and 07.30 to 19.00 hrs when the days were shorter.

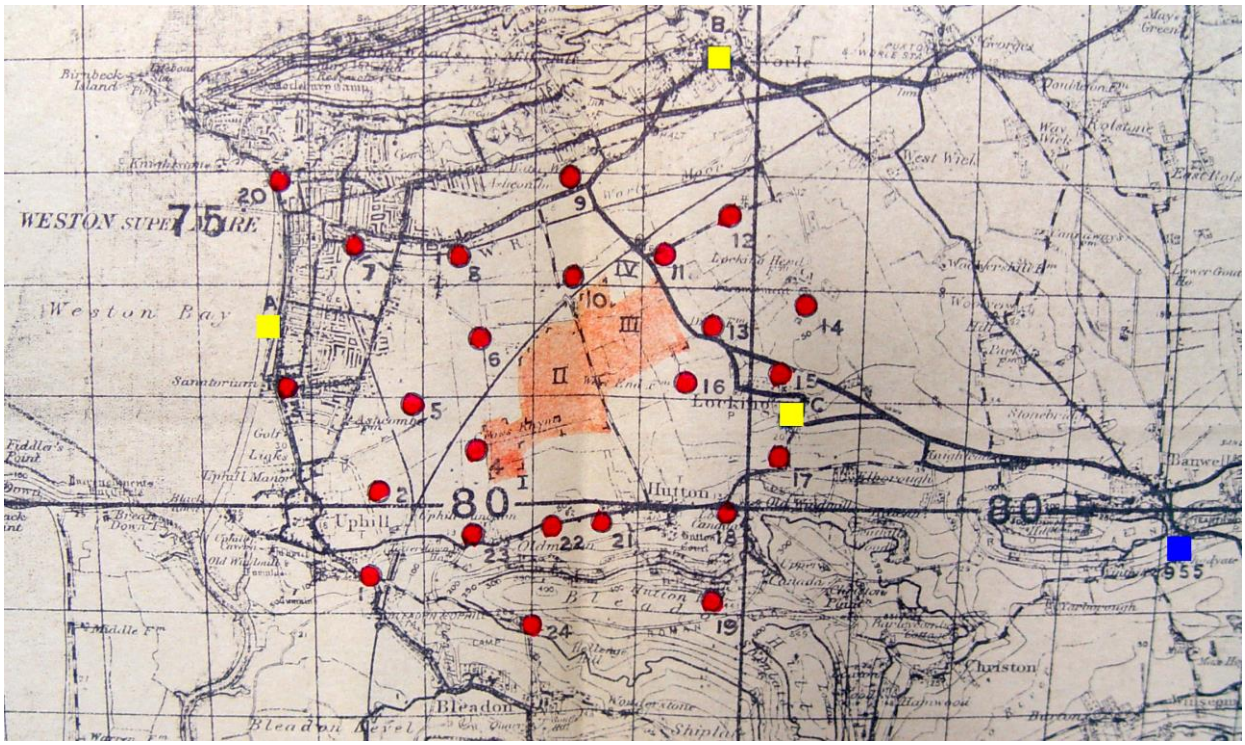

Fig 1: Map of Vulnerable Point 574 – the locations of barrage balloons c.1942.
A poor quality image of a 1-inch OS sheet (see also Appendix III).

The blue square is the squadron HQ and the yellow squares are flight HQs. Note this layout is not the original one, as many of those site were actually found to be unsuitable due to flooding, or poor access, or that the balloons interfered with local industry (such as Western Pottery and Co). It also fails to show the lanes whereby six balloon were close-hauled when the lane system was operating. Note the three balloons placed north, south and east to protect Weston, which were additional sites following two raids on the town. The original scheme offered very little in the way of protection to the town because enemy aircraft used the pier and coastline for their bombing run thus avoiding the balloon barrage. The new town sites were:

- Site 3A on the north-east corner of Weston Golf Course accessed from Uphill Road
- Site 7A on Station Approach, immediately north-west of Weston-super-Mare GWR Station
- Site 20A on private grassland, on east side of Knightstone Road between the pavilion and Cabot Hotel and accessed from the car park of the Royal Hotel.

A typical site was fenced, and had a concrete hardstanding (balloon bed) with an access road. Some sites also had a wooden hut.

2.4.2 40mm Bofors and 3.7 inch HAA Guns

It is unknown exactly when the Bournville tower was built and manned – the 72nd Battery, 23rd Light Anti-Aircraft Regiment War Diary indicates that there were several visits at the beginning of October 1940 by the regiment and brigade level officers in order to plan out the Bofors LAA sites. On 27 October an advance party and main body of 64th LAA Battery departed Portishead to Weston-super-Mare to take over manning. On the same day the battery commander visited sites which were in course of preparation. The Battery CO (Major GL Oatley) visited the Hutton sites on 22 November to supervise installation of 40mm equipment which had arrived there (it is assumed this refers to 40mm static equipment). Four predictors and four generators were not installed at Hutton until 15 January. But then the decision was taken to change from static to mobile with the first two mobile guns arriving on 14 February in exchange for two statics.
This also meant that 303 Troop, totalling 2 officers and 64 other ranks, was posted to 229th LAA battery, 23rd LAA Regiment on a re-organisation of the regiment from static to mobile. Two further mobiles arrived during the next two days replacing a pair of statics, and then 12 Bofors tractors were delivered from 23rd Regiment HQ, followed by 20 motor cycles.

Plate 12: The Bournville Bofors gun tower, (Bldg.133), as seen in September 1982.
Directorate of Fortifications and Works (DFW) 55087

Normally there would be three high-level static gun positions similar to this on a factory site but it is unknown whether there were any others – it is quite likely however that this was the only one on account of the LAA regiment converting from static to mobile guns. This tower is an example of the highest version, others were either single or two storey. Note the loop holes on the two upper stories.

There were several changes of troops at the vulnerable point, for example 303 Troop left Portishead on 15 November to take over part of the manning of the VP at Hutton, from a troop belonging to 64th Battery who left for Gloucester before returning.

During December 1940 and January 1941 a reconnaissance was carried out of the Weston area to establish suitable positions for four heavy-anti-aircraft gun sites, those selected being W1 at Uphill, W2 on Worle Hill, W3 on Woolvers Hill and W4 at Hutton. On 25 February four 3.7in mobiles were ready for action at both Uphill and Hutton, manned by 341 Battery, 116th Heavy Anti-Aircraft Regiment, whose headquarters was set up in a house named '*Foye'* in Uphill Road.

After this initial establishment, there followed a complicated turnover of different LAA and HAA units manning the guns in defence of the town, factory and airport.

2.4.3 Defence Against Invasion

According to Air Ministry drawing WA 118 (37588/52) there were five defence localities for inner airfield defence. The sites were constructed around the airfield boundary for defence against enemy parachutists either landing on, or close to the landing ground. Each had three or more pillboxes arranged in a triangle or following the airfield boundary and included supporting living accommodation in the form of Nissen huts.

The pillboxes were of three different types, all being monolithic concrete: types FW3/22, 24 and 26. It is unknown exactly when these structures were built, but it is assumed to be c.1940 and before 1941.

In October 1939, a guard was furnished by the Somerset Light Infantry consisting of 56 O/Rs who were accommodated in 13 small bell tents in front of the terminal building, but the conditions were unsatisfactory – the tents being in a sea of mud. It is believed that the problem was addressed by the Royal Engineers at Taunton who erected hutting, (presumed to be the Nissen huts) on the six defence sites. A sentry was also placed at the only entry point to the landing area in order to check ferry passengers for the ferry service as well as others who were entitled to be on site.

Plate 13: Type FW3/26 Pillbox on Defence Site No.4, (Bldg.104)
Note the thickened section below the loophole facing the airfield

While pillboxes were erected for static airfield defence, apart from the Bofors gun sites and the barrage balloons, it appears that the factory relied more on passive defence in the form of the closing of public rights of way, black-out provision, camouflage, fire break walls inside the larger buildings, unclimbable fencing around the perimeter, and air-raid shelters. The factory was probably (unconfirmed), organised into a Factory Defence Section (FDS), manned by the Home Guard enrolled from amongst the employees, to defend itself against a surprise attack for a period of one hour or less until the regular military mobile columns could come to the rescue.

At the end of 1940, the Ministry of Aircraft Production (MAP) authorised the purchase of light armoured cars for protection against parachute troops. The first production vehicle was known as the Beaverette Mk.II, manufactured by the Standard Motor Car company and armed with a Bren gun, the cost being £250 each excluding the gun. An improved Mk.III model costing £350 was followed by a heavily armoured car known as the Beavereels. It was based on the Leyland chassis and fitted with a 20mm canon weapon for use against tanks and aeroplanes. These were placed on order, to be manned by the factory Home Guard and part of the FDS, but after March 1941 the vehicles were transferred to the local army commander for use within the area defence plan, except for the weapons which were to be added to the fixed defences of the factory. Six Beaverettes were issued to Filton and four to Weston (chassis numbers of those at the Weston factory were 4744, 4745, 4753 and 4784).

Plate 14: Pillbox, (Bldg.104) – interior view looking towards the airfield

Both plates – July 2015

Plate 15: 16ft-span Nissen hut on Defence Site No.3, (Bldg.76), September 1982

Plate 16: Pillbox 51

2.5 Wartime Airfield

In 1939 the landing ground had four grass runways:

N/S: 830 yards NE/SW: 800 yards E/W: 1,100 yards SE/NW: 970 yards

By 1941 these had been significantly extended:

N/S: 1,200 yards NE/SW: 1,400 yards E/W: 1,700 yards SE/NW: 1,200 yards

Around October 1941, a 50-yard-wide concrete runway 1,000 yards long was built along the centre-line of the E/W runway; this was extended by 400 yards eastwards after 1942.

Height above sea level: 17 feet

Plate 17: A rather wet concrete runway as seen in 2009

Plate 18: Bessonneau Hangar, (Bldg.143), close to Hutton Moor Lane, September 1982
It was used by No.87 Gliding School (later No.621 GS) on the wartime Defence Site No.3

Plate 19: Blister Hangar, (Bldg.128), September 1982

2.6 Shadow Factories

2.6.1 Background

In June 1936 the Government 'shadow factory' scheme was announced which led to the planning and construction of the first five large factories in the Midlands which were completed by the end of 1937. Following a review of civil industry by the Committee of Imperial Defence, the Government adopted a two-fold plan to hasten armament production. The object of the pre-war scheme that was applied to the Midland car manufacturers in Birmingham and Coventry was to provide airframes and aero-engines required under the RAF expansion plans. In addition the aim was to give experience to the selected firms in this type of specialised work in order to provide a large reserve of productive power in case of a national emergency.

The shadow industry was initially centred on BAC, since it became apparent in early 1936 that far more Bristol airframes and engines (particularly engines) would be required than the company could supply from its existing works. It is unknown who, but someone in the Air Ministry suggested that the motor companies could build aero-engines in time of war. On 13 March 1936, a meeting took place between the Secretary of State for Air (Viscount Swinton), William Weir, Sir Cyril Newall and Christopher Bullock, with Sir Stanley White and other members of the higher management of BAC to present this scheme. BAC agreed with the proposal but suggested that the engine manufacture should be dispersed amongst the shadow factories so that the company would not waste time teaching each factory the means to make a complete engine.

Five out of seven manufacturers undertook to manage the first Government factories and sites were chosen near to the 'parent' factory. The first five companies were Rootes Securities, the Standard Motor Car Company and the Daimler Company (all at Coventry), plus the Austin Motor Company and the Rover Company in Birmingham.[7] Lord Nuffield refused to let Wolseley participate in the scheme as it did not involve the manufacture of complete engines, so the idea went ahead without Wolseley and instead the BAC erected an assembly plant at Gypsy Patch Lane, Filton.[8]

The first engine chosen for production was the Bristol Mercury VIII, a fully supercharged nine-cylinder air-cooled radial with a power output of 920hp at 13,000 feet; two of these engines were installed in the Bristol Blenheim medium bomber then being produced in quantity for the RAF. [9] In support of the Blenheim being chosen as one of the first aircraft for large-scale production under the shadow scheme, Roots Securities at Speke aerodrome near Liverpool also opened an airframe factory at the beginning of 1938.

2.6.2 Oldmixon and Banwell

The Blenheim was followed by the Beaufort[10] – a torpedo-bomber and then the Beaufighter[11] with an order placed in February 1939 for 300 aircraft. In September 1940, the Ministry of Aircraft Production (MAP) considered that BAC had not looked at alternative accommodation for Beaufighter assembly, although the company had been aware for some months of the need for fresh assembly space for aircraft manufactured at Filton. The company were of the opinion that they could always acquire Bristol (Whitchurch) as an easy option as it was only six miles by road and sent MAP a proposal to take over the whole aerodrome at the expense of British Overseas Airways Corporation who would be evicted. The MAP had considered the RAF Aircraft Storage Unit airfield at Colerne for BAC or BOAC to take over a type 'K' aircraft assembly shed, but both companies objected strongly to using Colerne, owing to the distance of 18 miles and narrow roads.

Meanwhile a search of the existing shadow factories in the Midlands was made for the manufacture of Beaufighter airframe components with the Austin Motor Company at Longbridge (wings) and the Standard Motor Company at Coventry (fuselages) being selected, as well as a new shadow factory near Accrington at Clayton-le-Moors, to produce the new Hercules engine.

A proposal to erect a new shadow factory at Warwick in support the components made at the motor firms came to nothing and in May 1940, the site at Oldmixon adjacent to the airport was to be developed instead.

Contracts were awarded to John Lysaght & Co for the erection of the factory steelwork and the appropriate government licenses issued. General building construction work was awarded to William Cowlin & Son, (both of these companies were involved in the expansion at Filton).

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[7] After October 1936: Austin: crankshaft, reduction gear and engine assembly. Standard: cylinders. Rover: connecting rods, pistons, tappets and valves. Rootes: blower, rear cover and petrol pump. Daimler: crankcase, oil sump and intake. BAC: engine assembly and testing.

[8] BAC had specialised for many years in the manufacture of radial air-cooled aero-engines of high power and good reliability. Just before the war the company developed sleeve-valve engines in both single and double-row radial forms. The company also developed the 'power-egg' concept which consisted of the aero-engine with all of its ancillary equipment, including cowling, exhaust manifold, fuel and oil pipes. This would enable the complete unit to be detached from the airframe structure, thus reducing the time for changing engines.

[9] The Blenheim was an all-metal low-wing monoplane with two Bristol radial engines, used either as a fighter and bomber.

[10] The Beaufort was all-metal, mid-wing monoplane with two Bristol Taurus engines, equipped for torpedo bombing and general reconnaissance duties with a weapon load of 1,000lb or one torpedo.

[11] The Beaufighter was a very successful all-metal mid-wing fighter monoplane, a two-seater aircraft with two Bristol Hercules engines.

Plate 20: No.1 Erecting Hall at Banwell, September 1982

In the summer and autumn of 1940 a new MAP policy was created, the main feature of which was planned dispersal in anticipation of possible enemy action. This underlined that all stages up to final assembly should proceed in at least three different locations, so that no component would be entirely lacking if one or even two factories were knocked out.

A review therefore was made of all important MAP contractors with a view to determining where and how a suitable dispersal could be arranged. On 9 September therefore, the MAP insisted on a re-design of the site layout and so construction came to a halt. BAC suggested that the No.2 Flight Shed should be dispersed to Hutton Moor within the boundary of the extended aerodrome and that No 1. Erecting Hall should be relocated to a new site near the hamlet of Elborough. The MAP agreed and the scheme went ahead, the Elborough site eventually being renamed Banwell.

Plate 21: No.1 Erecting Hall at Banwell – wide angle view, 1990

The wartime productive floor area (in square feet) of the BAC's works at Filton, Weston and dispersal sites between September 1938 and August 1941 was as follows:

Site	Sep 1938	Mar 1939	Sep 1939	Jun 1940	Aug 1941
Filton	333,472	495,618	592,462	616,292	696,115
Weston	N/A	N/A	N/A	N/A	210,285
Banwell	N/A	N/A	N/A	N/A	124,000

2.6.3 Post-War

In August 1945, aircraft production at Banwell ceased, and MAP control of both Banwell and Oldmixon factories ended in January 1946. At this time, the immediate post-war employment in the town for engineering and the aircraft industry fell from 5,100 to around 2,000. The services, which had lost part of their workforce during the war, regained part of their labour force but in 1948 the main companies were still employing fewer than their pre-war numbers.

Between 1945 and May 1948 Oldmixon manufactured aluminium bungalows for the temporary housing programme for a MAP (later Ministry of Supply) contract under the auspices of the newly-formed committee known as the Aircraft Industries Research Organisation on Housing (AIROH). Between 1948 and 1957 BAC developed and then manufactured nearly 400 aluminium school, hospital and college buildings for home and abroad.

Part of the factory was eventually allocated to other firms, such as Henlys of Bristol (1948–65) and Andrew Brothers Ltd (1950–52). In 1951, aircraft sub-contract work was received from Filton with the production of components for the DH Venom FB1 fighter, followed by armament work for Avro Lincoln gun turrets and parts for rocket motors.

On 1 January 1956 the Oldmixon facility became the Helicopter Division of Bristol Aircraft Ltd and production of the Sycamore commenced in February 1956, followed by the tandem-rotor Belvedere.

In 1959 Westland Aircraft Ltd took over all of the UK's helicopter manufacturers and Oldmixon became the Bristol Division of Westland Aircraft, becoming the Product Support Manufacturing Centre.

In March 1984, the company bought 335 acres of the aerodrome and the Oldmixon factory site. After a reorganisation during 1987, the manufacturing element became Westland Industrial Products Ltd and the design part was renamed Westland Design Services Ltd. The aerodrome and the northern part of the factory were then sold to a property developer (changing hands several times) with ownership finally passing to the Persimmon Group in 2004.

Westland Industrial Products Ltd moved to Yeovil September 2002.

Plate 22: Believed to be the Short Range Transport convertiplane rig, September 1982
Note the torpedo netting to contain an engine or rotor failure.

Fig 2: The 1942 layout with completed full-length runway
See Appendix 1 for building descriptions

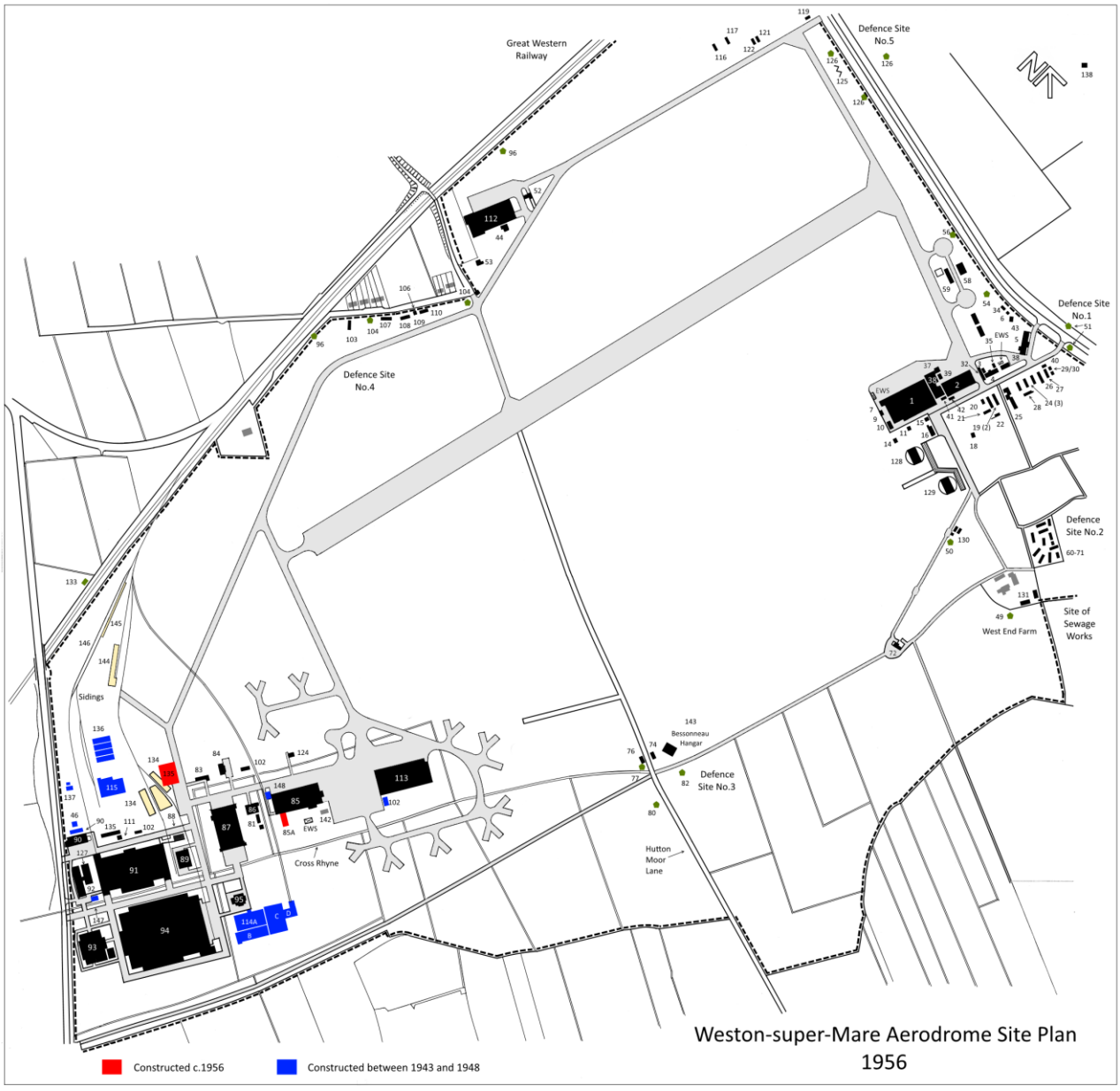
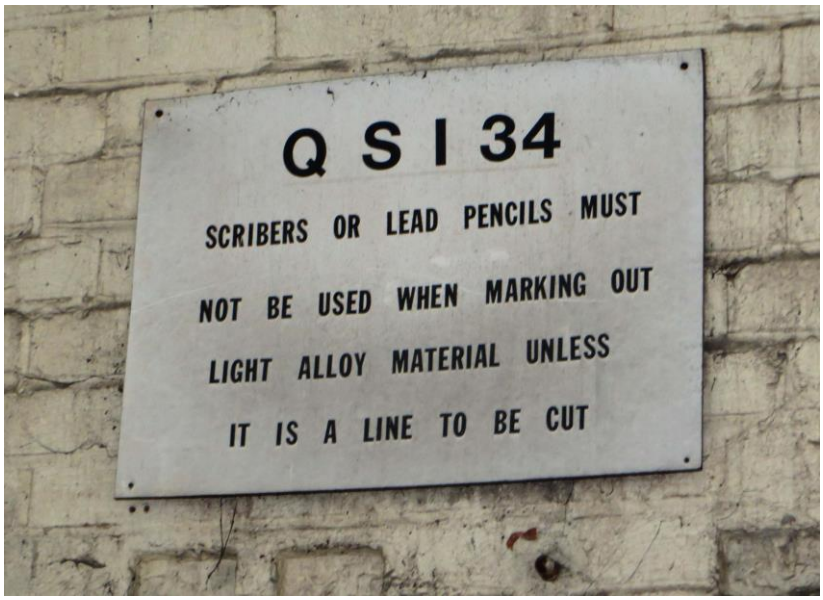


Fig 3: The 1942 layout with buildings constructed 1943–48 and 1956
See Appendix 1 for building descriptions



Left
Quarantine Store

Above and left
No.1 Flight Shed

Plate 23: Examples of signage

Part 3: Gazetteer

The gazetteer covers just 17 buildings within the survey area, which is that part of the factory on the north side of Cross (Carrier) Rhyne.

Three of the most significant structures are outside the scope of this report. The Experimental and Modification Building (Shop 5) and the Erecting Hall (Shop 8) lie south of the Rhyne, whilst No.2 Flight Shed is approx one mile to the north.

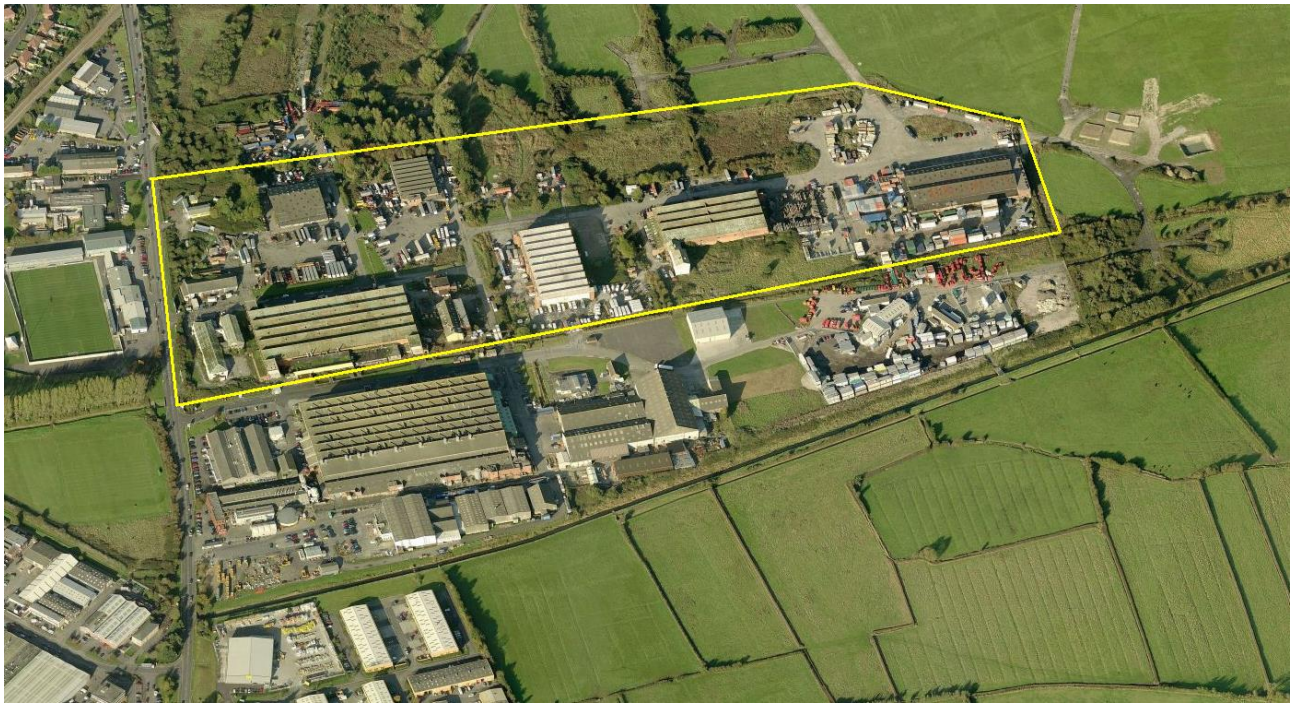


Plate 24: Bing map of the survey area (outlined in yellow)

Plate 25: Signage in No.1 Flight Shed

3.1 Bldgs.46, 102 and 148 Water Pump Houses

Although single storey on the surface, buildings 102 and 148 have a deep basement – the depth of the working floor level is unknown and this area is the pump room. Access to this level is by a vertical steel ladder. The ground floor is a concrete slab which has an access point in one corner with railings around the edge, the remainder of this room being the motor room, where there are pairs of Crompton-Parkinson 4hp motors, Wallwin level switches and starters that powered the pumps on the floor below. The lower floor therefore contained a pair of vertical centrifugal pumps (possibly Wallwin submersibles) and pipework. These buildings could be associated with ground water or sewage. Building 102 is at the beginning of the circuit and is connected by an underground 4in diameter pipe which runs westwards before changing direction to the west of Shop 4 to join up with Building 148 (at the north-west corner of No.1 Flight Shed, shown above in yellow). From here it continues in a westerly direction towards the garage before connecting with another pump house adjacent to the north side of the garage annexe where it connects with Building 46 and from there the 4in pipe makes its way northwards to link up with the town sewer. En-route there are also piped sewage mains joining the circuit from the various toilets and washrooms to the pump houses.

Generally the above-ground building is constructed of 9in brick (English bond) – there are no windows but it is vented instead. The roof is a nominally flat 4in concrete slab. The building is raised slightly above the natural ground level, the single entrance having a sloping ramp and wooden door.

It was not possible to get access to Building 46 but it is assumed to be similar to the other two with a basement.

According to the wartime plan, Building 102 was built on the site of a Nissen hut, being located at the south-west corner of No.3 Flight Shed. It is slightly different in that it has an attached workshop with double-door access which has been added to the original. It also has a multi-pane steel casement window.

- Dimensions: Bldg.46: 10ft 6in × 9ft 6in (footprint)
  Bldg.102: 8ft × 9ft and 11ft × 8ft (internal)
  Bldg.148: 10ft × 11ft 9in (internal)
- NGR: Bldg.46: ST 33602 59544, Bldg.102: ST 34178 59588, Bldg.148: ST 33961 59587

Plate 26: Pump House, (Bldg.148) – one of the motors

Plate 27: Pump House, (Bldg.46) – view looking west

Plate 28: Pump House, (Bldg.102)

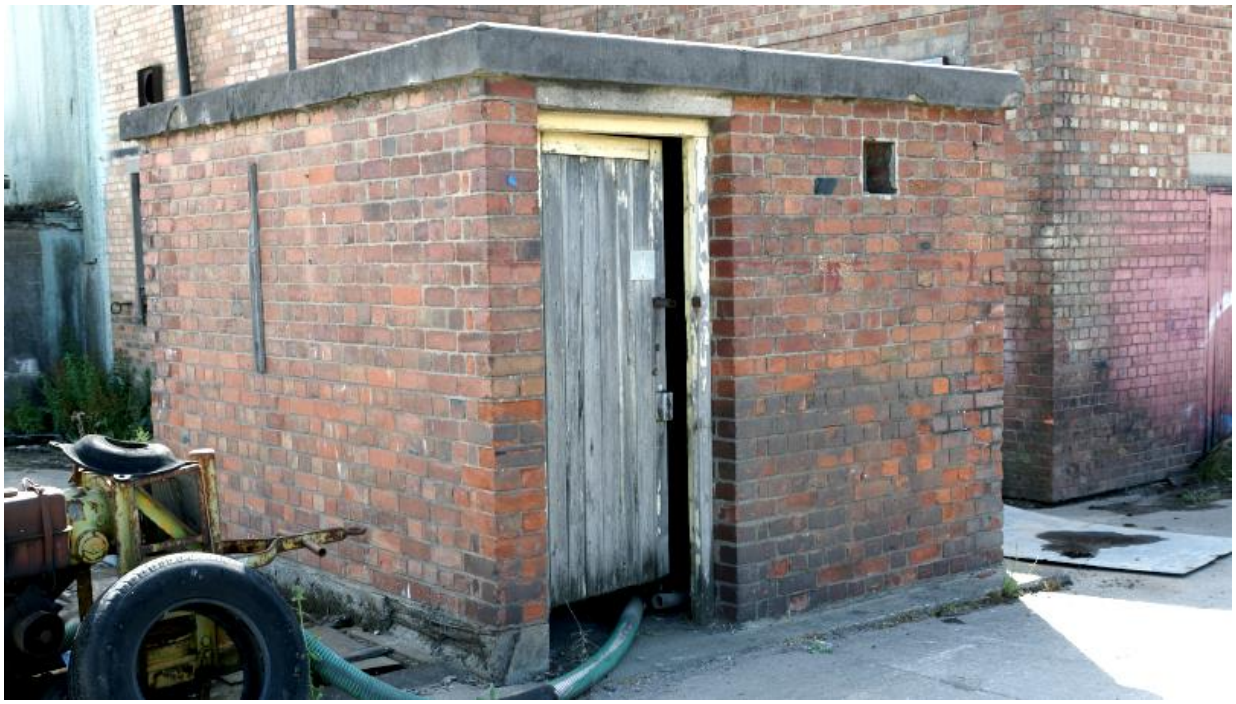


Plate 29: Pump House, (Bldg.148)

Plate 30: Pump House, (Bldg.148) – view towards airfield

3.2 Bldg.85: No.1 Flight Shed / Shop 4

Located in front of a substantial hardstanding and facing out onto the airfield taxiway is No.1 Flight Shed. It is a side-opening (one side only) hangar-like building with a rectangular-shaped planform having a north-light roof arrangement that avoids direct sunlight inside the shed as this would be undesirable. It has four longitudinal bays incorporating four sets of mutually supporting roof triangles (low-pitched and high-pitched sides) as well lattice girders spanning the length of the shed.
The lattice girders are carried on 'A' frames, the rakers being partly exposed outside the shed and partly hidden by side annexes. Roof cladding is Trafford tiles. There is also a central 'A' frame and lattice girder inside the shed with an outside boom exposed above the roof space that gives central support to the lattice girders. This ensures that the front elevation is completely clear of stanchions, (apart from the single 'A' frame), and is able to support itself, particularly when the doors are open. The structural arrangement of the shed is such that the interior has a clear span and uninterrupted floor space. The steelwork was supplied by Appleby-Frodingham Iron Works, Scunthorpe.

The steel framework is therefore mainly arranged over three sides. There is a fire break that separates the shed into two unequal sections. The main door could open full width along the north elevation and stack inside projecting brick alcoves which form part of the front bay. The doors are electrically-driven Esavian folding concertina types manufactured by the Educational Supply Association Ltd of Stevenage. They are of wooden-frame construction clad with steel sheeting, but now have relatively modern Westland 14-leaf concertina doors inserted for vehicle movements. Main wall infilling is 13.5in brick and annexe external walls are 9in thick. Side walls have single-storey annexes with single-pitch roofs. The floor has part of a railway line inserted at the western end and there are what appear to be two weighbridges in the smaller section.

Around 1956, a steel-framed paint shop extension was added to the rear elevation clad with corrugated iron.

See Appendix 2 for usage.

- Dimensions: 127ft 8in wide, length 279ft 5in (198ft to fire break)
  Height 30ft 8in to underside of truss and 47ft 5in to top of truss
  Annexe is 10ft wide
- NGR: ST 34216 59628

Plate 31: Flight Shed No.1 – view east

Plate 32: Flight Shed No.1 – view west

Plate 33: Flight Shed No.1 – interior view looking to towards the fire break and 'A' frame

Plate 34: Flight Shed No.1 – interior looking towards the smaller section of the shed at the west end wall

Plate 35: Flight Shed No.1 – one of two internal central 'A' frames

3.3 Bldg.87: Dope Shop / Shop 6

Located between the Boiler House and No.1 Flight shed is the Dope Shop, an end-opening hangar with main doors at the southern and northern ends. It has dedicated concrete aprons and taxiways, the one on the southern side having a bridge over the Cross Rhyne.

The hangar has a rectangular-shaped planform aligned north/south. It is steel-framed, the steel work being supplied by the Lanarkshire Steel Company Ltd, Motherwell and the main external walls are clad with 15in brick infill. There are small single-storey annexes along both side walls. The hangar is arranged as nine, 27ft-wide bays of north-light trusses with lattice girders supported by eight 'A' frames which are exposed outside the hangar. This gives a clear uninterrupted floor space inside the building (each bay has a pair of intermediate 'H' columns within, one on either side and partly hidden by the external wall).

There are longitudinal 25cwt runways and the roof cladding is Trafford tiles. Below each north-light frame on the gable wall is a large electric fan, no doubt essential for a building which was basically responsible for paint spraying. Main doors at either end are full-height electrically-driven Esavian timber-framed doors clad in steel sheeting, which stack inside brick door alcoves that project out from the main building and which form part of the end bays.

All aircraft built at this and the Banwell site would be painted and camouflaged in this building.
See Appendix 2 for usage.

- Dimensions: 134ft 6in wide × 240ft 6in long (internal)
  Height to truss 30ft 10in and maximum height 45ft
- NGR: ST 33884 59538

Plate 36: Dope Shop – north elevation

Plate 37: Dope Shop – interior view looking south

Plate 38: Dope Shop – interior view looking at the eastern side wall
Note the row of high level fans

Plate 39: Dope Shop – interior view showing lattice roof girders and north-light trusses

Plate 40: Dope Shop – interior view of the Esavian doors

3.4 Bldg.88: Power House

Located between Shops 6 and 7 and adjacent to the Boiler House, is the Power House. It is the inlet electric sub-station and consists of a brick building functioning as a two-storey switchgear room and a single-storey annexe containing four transformer cubicles protected by a substantial (13.5in) blast wall. The gap between the blast wall and the transformer annexe has now been roofed over using the blast wall to support it.
The switchgear room is steel framed with exposed RSJs and having external walls of 13.5in solid brick infilling and a concrete slab roof made of precast concrete beams. Windows are 12-pane steel casements.

- Dimensions: 30ft 2in × 44ft 5in (internal)
  Height ground floor to roof 21ft 7in
- NGR: ST 33794 59517

Plate 41: Power House – view looking at the blast wall of the transformer enclosure in front
The switch room is behind

Plate 42: Power House – view from north

Plate 43: Power House – the first floor

3.5 Bldg.89: Boiler House

The Boiler House lies between Shops 6 and 7, and next to the Power House. It consists of a steel-framed and brick-clad building with a concrete-walled coke compound on the west side and a two-storey office accommodation block on the east side.

The original boiler house has a full-length roof-mounted lantern light or ventilator arrangement that is bolted to Cargo Fleet Iron Co steel trusses – roof cladding is Trafford tiles. The lower part of a brick chimney stack remains. Access was only possible to one section of the brick building which has had a mezzanine floor inserted, supported on steel columns. In more recent times, it has been extended southwards with a light-weight steel-framed shed functioning as the new boiler house. It is clad with corrugated iron sheeting with a stainless-steel stack and contains a large boiler.

The office block is located on the east side wall – this is assumed to have been the clerk of works' offices. It is also steel framed and brick clad (13.5in walls) with a flat concrete slab roof carried on hidden RSJs and timber floor carried on exposed RSJs. The front elevation has a range of seven 16-pane steel sashes at ground and first floor levels. When viewed, the ground floor is in use as a chrome-plating shop and the upper floor is derelict which is accessed via an external steel stair.

Outside, the coke compound is constructed of concrete block; it has a narrow-gauge (probably 600mm Decauville) railway approaching it which presumably once connected with the coal dumps. In more recent times, it may also have functioned as an oil tank bund, but the tanks are now missing.

- Dimensions: Boiler House 47ft × 124ft (footprint).
  Height to truss 19ft 9in, total height 33ft 5in (internal).
  Offices 22ft × 100ft (footprint)
  Coke compound 46ft × 74ft and wall height 4ft 6in
- NGR: ST 33804 59479

Plate 44: Boiler House – view looking south-east

Plate 45: Boiler House extension

Plate 46: Boiler House extension – interior, showing the boiler

Plate 47: Boiler House – interior

Plate 48: Boiler House – Cargo Fleet roof trusses

Plate 49: Boiler House offices / workshop – front elevation

Plate 50: Boiler House offices – first floor interior

3.6 Bldg.90: Garage

Located at the main entrance to the northern site and opposite the Administration Block is the Mechanical Transport Garage. It has a rectangular-shaped planform and consists of a 12-bay steel-framed open plan garage (except for a small workshop that is accessed from outside), There are four main door openings (12ft 8in wide) along the south elevation having Westland concertina folding doors between 18in by 39in piers. The roof is constructed of standard 50ft-span steel pitched trusses clad with Trafford tiles.

There is a toilet block and single-storey annexe at the west end and a further one at the northern end.

- Dimensions: 48ft 7in × 130ft 7in (internal)
  Height to truss 13ft 8in, and to top of truss 25ft
- NGR: ST 33607 59520

Plate 51: Garage – front elevation, partly hidden by vehicles

Plate 52: Garage – interior view

Plate 53: Garage annexe

3.7 Bldg.91: Quarantine Store / Shop 7

Located close to the entrance of the site and in front of No.2 Erecting Hall is the Quarantine store. It is a large building with a rectangular-shaped planform, aligned east/west. It has a wide annexe along the south elevation with two main door openings on the southern and northern elevations. There were never any full-span main doors, instead access was through four 30ft by 30ft wide loading bays, three external and one internal. The two on the south side have bridges over the Cross Rhyne. Apart from the north-light roof, its structural arrangement which supports the roof is entirely different from the other main shops.

It has similar triangular-shaped roof trusses to those used on the other main shops, arranged as five bays, but instead of external booms or lattice girders it relies on rows of single-lattice RSJ stanchions (these are naked and have not been encased in concrete to meet with local by-laws). Roof covering is Trafford tiles and glazing panels. The stanchions therefore carry the roof trusses, as with this building an uninterrupted clear span was unnecessary since the shop was going to be used for storage. Structurally therefore, the shop floor is based on a 30ft (longitudinally) by 37ft (laterally) structural grid (also 30ft clear height) with fourteen bays longitudinally and five laterally (420ft by 150ft). The result is a less complicated roof structure but needing rows of stanchions at shop floor level. Good use is made of this arrangement as it allows more than one continuous row of runways for travelling cranes. The main shop is divided longitudinally (one bay) by a brick (English bond) fire-break wall into a large main shop and a narrow shop of similar length – this wall is built between a row of stanchions and has a travelling crane. Access from one to the other is through full-height fire doors.

Steelwork was supplied by Appleby-Frodingham (Scunthorpe) iron works as well as Dorman Long Ltd of Middlesbrough. External wall infilling is 13-in brick and internal is 9in.

The western part of the southern annexe has been used a treatments shop using caustic soda. The floor is littered with brick dwarf walls that once supported caustic and washing tanks with tubular-steel safety rails, and the floor has a very substantial drainage system connected to underground storage tanks / effluent treatment system located outside the building. An irrigation rig is extant in the north-west corner of the shop and pair of sinks provides a washing station for operating staff and also a high-level ventilation system. This room is also steel framed with brick infilling and has a substantial lattice girder roof arrangement. Another room functioned as a boiler house and pump room which is to the east of the treatment room.

This building would store items received from outside suppliers which would need to be inspected before fitting to aircraft under construction. See Appendix 2 for usage.

- Dimensions: Main shops (total) 420ft long × 185ft wide
  Height to underside of truss 30ft, height to top of truss 44ft 6in
  Treatment room 51ft 149ft 6in
  Plant room 41ft 6in × 61ft 10in
  Central annexe 30ft 4in × 51ft
- NGR: ST 33708 59466

Plate 54: Shop 7 – view looking south-west showing the one internal loading bay

Plate 55: Shop 7 – loading bay signage

Plate 56: Shop 7 – view looking east inside the main area

Plate 57: Shop 7 – clearly showing the uncluttered roof trusses

Plate 58: Shop 7 – looking east along the narrow section

Plate 59: Shop 7 – treatment room annexe

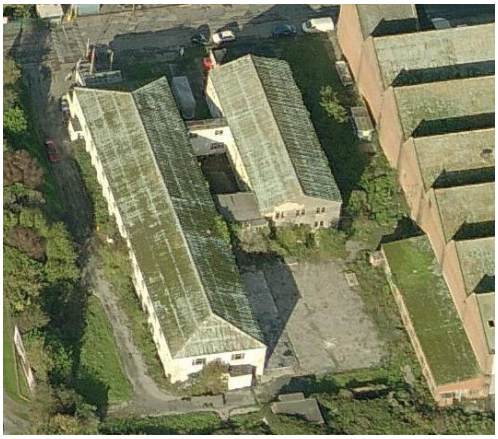
Plate 60: Shop 7 – external view of the treatment room with the plant room on right

Plate 61: Shop 7 – external effluent processing sumps for the treatment room

Plate 62: Shop 7 – view looking west at an external loading bay

Plate 63: Shop 7 – view looking south-east
Note the camouflage paint

3.8 Bldg.92: Administration Block



The two-storey Admin Block is located at the entrance to the northern site and consists of two parallel link-detached wings joined by narrow corridors. The main block faces Winterstoke Road while the smaller wing (which is thought to be an extension) is positioned between Shop 7 and the original wing.

The internal layout of the main wing is symmetrical having a central entrance with hallway and an inner hall with a staircase to the first floor. There is a central longitudinal corridor which gives access to partitioned rooms on either side. These are mainly metal-clad prefabricated units fitted between RSJ columns. One small room is fitted out as a telephone exchange. It had direct lines to Westland's Yeovil complex.

The building is steel framed with exposed RSJ beams and columns. There are notable differences between the two wings:

Main wing: windows are inserted within continuous lintels and sills on the main block, original windows (rear only) are 24-pane steel casements. The roof is steel framed with hipped-shaped rafters.

Rear wing: windows are inserted within brick mullions; the openings have individual sills and lintels. The roof has traditional gable ends.

- Dimensions: main block 50ft × 200ft (footprint)
  rear block 100ft × 42ft
- NGR: ST 33603 59448

Plate 64: Administration Block – front elevation

Plate 65: Administration Block – main entrance

Plate 66: Administration Block – rear wing

Plate 67: Administration Block – typical office arrangement

Plate 68: Administration Block – the original connecting corridor and an ancillary building

Plate 69: Administration Block – the telephone exchange

3.9 Bldg.113: No.3 Flight Shed / Shop 3

No.3 Flight Shed was constructed c.1942. It is located to the east of No.1 Flight Shed in the centre of a contemporary area allocated for aircraft dispersal, originally with seven sets of MAP-designed 'Y' dispersals as well as a large concrete aprons. None of these survive today.

It is an end-opening shed with its main doors facing north onto the airfield. The building has a rectangular-shaped planform aligned east/west, constructed of a steel frame clad with 26-gauge corrugated iron with an 'M' shaped roof. Steelwork came from the Appleby-Frodingham Ironworks. The roof arrangement is a series of 2-bay (longitudinal) trusses and is 20 bays long (non north-light) which act as cantilevers supported by deep lattice girders placed longitudinally with deadlights to flood the shop floor with natural illumination. This method has been chosen as it reduces the number of columns required in order to give a clear span inside the shed – the girders are supported at the central point by single latticed stanchions. Main doors are timber-framed Esavian concertina folding leaves clad with steel sheeting.

The end walls are partly brick (up to 10ft 6in high) and corrugated iron. Today the building is largely open plan, but has a concrete-block partitioned area in the north-east corner accessed through Bolton Gate Company Ltd Eurofold doors which have been inserted into a section of original doors. This small shop has a travelling crane running full length. There is an original full-length rear annexe and a flat-roofed annexe on the eastern gable end (access not possible) plus a projecting annexe on the north-west gable end. All but the rear one have been added to the building.

See Appendix 2 for usage.

- Dimensions: 124ft × 283ft
  Height to truss 21ft 8in and height to roof 37ft 2in
- NGR: ST 34014 59583

Plate 70: No.3 Flight Shed – front elevation

Plate 71: No.3 Flight Shed – interior view

Plate 72: No.3 Flight Shed – interior view of small shop within showing the Esavian doors

3.10 Bldg.115: Stores and Spares Assembly / Shop 10

Introduction

Located on a site close to the factory railway sidings is the Stores and Spares Assembly Shop.

The Ministry of Aircraft Production (MAP) funded the design and construction of a series of standard prefabricated end-opening hangars for the maintenance of aircraft on operational RAF stations, aircraft storage units and factories.

The largest of these was the type B1 followed by the B2 and then the A1 and A2. All hangars within this family were similar in design, they only varied in scale and whether they had one, two or no side annexes. The concept was designed by T Bedford Consulting Engineers, contracted to the MAP.

Building 115

In November 1942, BAC Weston had accepted increased commitments for the production of Beaufighter spares. The Banwell factory had been taken over for Beaufort production while the Oldmixon factory specialised in producing the Beaufighter; it therefore became necessary for the company to find additional floor space. It was at first proposed by the MAP to erect two pairs of Super Robin hangars built side-by-side, one pair at each site at Oldmixon, however BAC wanted two A1 hangars instead – one at each location. Hangars of this type could be bought at a cost of £4,600 without side annexes and not including transportation, erection, services and foundations. One hangar was required as a store and a spares assembly shop (Bldg.115) and the other for trial installations (Bldg.114). On 7 April 1943, the tender from Redpath Brown & Co Ltd for the supply and erection of the two hangars was accepted. The main contractor (building work) was G Pollard & Co Ltd with another subcontractor, William Cowlin & Son, constructing a workshop and toilet annexe. The total cost of Bldg.115 came to £14,620. 11s. 2d, plus £1,680 for the side annexe which was just a central section, not the full length one as seen today. The costing was approved by BAC on behalf of MAP on 20 January 1943 and it is believed that the buildings were completed during August of that year.

Redpath Brown sourced the steelwork from two different manufacturers, namely Dorman Long of Middlesbrough and the Skinningrove Ironworks – this was delivered by rail and transported by road from Weston-super-Mare station.

In support of the new spares hangar, the Great Western Railway Ltd were also awarded a contract to extended the existing sidings to accommodate a further 12 trucks as well as extending the line into the north-western loading bay of the quarantine store (Bldg.91). Although the extra sidings were built, it is unknown if the line ever reached the quarantine store. The estimated cost for this work was £1,680.

In October 1944, heavy winds and driving rain had damaged the roof covering of both new hangars as well as No.3 flight shed (Bldg.113), whereby water penetration had occurred through the seams and laps. The cladding consisted of 26-gauge corrugated-iron sheeting with wire netting and matting painted with stippled camouflage paint (Arpex). One idea was to employ the services of Industrial Engineering Ltd to repair the damage by plugging the gaps with Masticon asbestos waterproofing and painting with heavy Flexolac asbestos liquid. Another company was then contacted who advised against removing it as this

would cause damage to the roof. With the cessation of camouflage work, the company had a large stock of Arpex12 texturing paint at the premises of AW Hawksley Ltd, Brockworth which could be made available to BAC at no charge except for the carriage from Gloucester to Weston and it could be applied by BAC's own works department.

The Building Today

The building is aligned with the main doors facing north/south. The south elevation features a standard 35ft-wide annexe with external walls clad with unlined Trafford asbestos tiles with a row of 12-pane steel casement windows. Only the central section is original, the ends were added later. The roof is arranged as two separate roof angles, that nearest the hangar has the same pitch while that over the outer part is at a shallower angle. This annexe was designed to be a quarantine store, a typists' office and quarantine office plus a progress office.

The full-length north elevation has a non-standard cement rendered brick (English bond) toilet block and workshop annexe; originally the annexe included just the brick-built toilets consisting of a large female lavatory and a smaller male one. The remaining part of the annexe was added later which today from inside the hangar dividing wall is concrete block. It has a single pitch roof.

RSJ stanchions carry the roof trusses and these are exposed along the south side and partly hidden inside the annexe wall on the north side. The trusses are also exposed, constructed of angle-iron with riveted tension and compression struts. Roof cladding over the hangar is corrugated-iron sheeting fixed to rails with deadlights and internally lined with modern insulated panels while the hangar gable ends and north wall are partly clad with corrugated-iron sheeting. Main doors in six leaves open full width and externally stack on projecting door gantries supported by 'A' frame trestles and these are clad with corrugated-iron sheeting. In more recent times the east elevation has a cement rendered brick annexe built against the main doors.

The hangar floor was originally partly covered by a walled workshop with rows of workbenches and a small inspection office.

Very little of the railway siding survives today except for a few lengths of rail unearthed by the developers, and now awaiting scrapping.

- Dimensions: span 95ft, length 134ft 4in
  9 bays each at 14ft 7in centres, (normally a hangar is 12 bays long)
  Standard bay width 35ft 7in
  Total height 38ft, height to truss 19ft 4in
- NGR: ST 33678 59614

[12] Arpex was manufactured by W&J Leigh Ltd, Tower Works, Mill Hill, Bolton

Plate 73: Shop 10 – view looking south

Plate 74: Shop 10 – interior view looking west

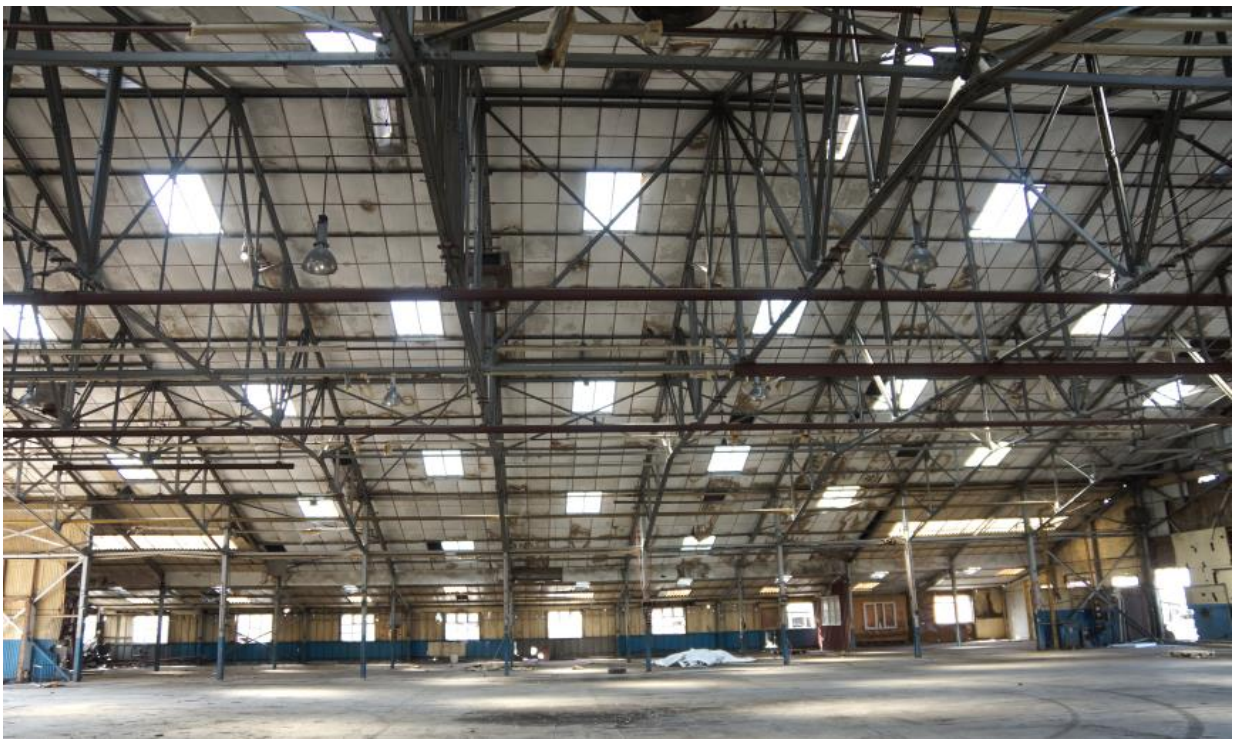


Plate 75: Shop 10 – interior view looking towards the standard annexe

Plate 76: Shop 10 – interior view looking from the standard annexe towards the northern annexe

3.11 Bldg.135: Helicopter Design Office

The Helicopter Design Office (HDO) was built on part of the site of the WWII coal dumps c.1956.

It has a rectangular-shaped planform constructed of a tubular steel frame with a central row (now cased). This together with RSJs supports a north-light roof arrangement also made from tubular steel (a lighter gauge than the columns).

There is a single-storey annexe along the east and south elevations.

It may originally have been clad with light-weight curtain walling (partly covered in corrugated asbestos sheeting) and brick cladding around the annexes.

While some of the original walling survives on the north elevation, the annexe walls have been overclad in modern brick. In more recent times it has been sub-divided into two halves by breeze block walls between the central row of columns and the roof and framework is hidden from view by a false ceiling.

- Dimensions: 98ft × 132ft (footprint without annexes)
- NGR: ST 33774 59638

Plate 77: Design Office – view looking north-west

Plate 78: Design Office – view looking south-west,
The northern gable end elevation still shows signs of its original wall cladding

Plate 79: Design Office – interior view of the western section
Shows the cased columns and false ceiling hiding the roof structure

3.12 Bldg.137: School Building

Located close to the main road and adjacent to the 'new' north gate are two BAC prefabricated school buildings.

The Ministry of Education had become interested in the possibility of school buildings being manufactured by aircraft firms. Structural and Mechanical Development (SMD) company of Slough, AW Hawksleys and BAC were approached with a view to the design and manufacture of schools constructed of flat transportable panel units.
This concept was different from the AIROH committee box-section aluminium type B1 and B2 bungalows designed by AF Hare and produced by six factories:

- BAC Banwell and Weston-super-Mare
- AW Hawksley Ltd Gloucester
- Vickers-Armstrong Ltd Blackpool and Chester
- Blackburn Ltd Dumbarton.

They were however similar to the BL8 semi-detached bungalow produced by BAC and AW Hawksley from 1948 to 1950, of which 5,000 units were built by these two companies.

SMD Engineers, in conjunction with the other two companies, commenced general design and development work, but for reasons unknown BAC broke away from the group and instead appointed Richard Sheppard as their consultant architect.[13] The company proceeded to develop in collaboration with the Northern Aluminium Company of Banbury, a 4ft-wide modular building system for schools. This included a wide range of wall and roof units, most being sufficiently light in weight to be handled without lifting tackle.

As with the earlier bungalows, the raw material came from the Ministry of Supply's recovery depots of crashed aircraft and other scrap made up to DTD 479 specification. Other parts such as cladding and roofing were of rolled Alclad (with an outer covering of pure aluminium to enhance the structure's resistance to weathering).

The 4ft-wide roof units of 12.5 degrees pitch were made for spans of 16ft 3in, 24ft 3in and 32ft 3in, then eventually for assembly halls of 40ft span. The roof covering is 20-gauge sheet bonded to an underlayer of millboard in order to minimise the effects of drumming from rain and to keep condensation down.
The sheeting was riveted in the factory to two aluminium trusses for each 4ft bay – these were bolted to the heads of the load-bearing wall units. The finished ceiling was then fixed to the underside of the truss, overlaid with mineral quit to give thermal insulation. Wall panels were of standard heights to suit the various parts of the school complex. These were sub-assembled in the works and contained ready-glazed windows which formed the sub-frames of the wall panels. Solid portions were filled with glass fibre.

In the earlier Mark 1 versions, the wind loads were taken by the panels between corridors and rooms. Triangular fins, which gave these early schools a characteristic appearance, were attached to the wall panels to act as wind braces. These were omitted from later versions. A Mark II was eventually developed for secondary schools, up to four-storey height which had a structural frame of steel, with hot-rolled stanchions and beams of 2ft 3in depth. The stanchions were encased externally with fluted aluminium sheeting and internally with moulded plaster.

[13] Sir Richard Herbert Sheppard CBE (1910 – 1982). Born in Bristol, his company, Richard Sheppard, Robson & Partners, founded in 1958, was responsible for the design of over eighty schools, as well as buildings at Loughborough University, the University of Leicester, Brunel University, City University, the University of Durham, the University of Newcastle, Manchester Polytechnic, Imperial College, London, and, most notably, Churchill College, Cambridge.

Both Oldmixon and Banwell were producing prefabricated buildings, but the decision was then taken in June 1954, to concentrate production at Banwell. On account of their good cost–to-weight ratio, flat-packed aluminium buildings were particularly suitable for export, however despite a good order book in July 1955, BAC decided to close down the building division and concentrate instead on aircraft. The company finally completed their order book in 1957.

- Dimensions: unknown
- NGR: ST 33598 59606 and ST 33595 59620

Plate 80: The 15-bay aluminium Mark I school building with triangular fins

Plate 81: The school building, 1987

Plate 82: The small school building

Plate 83: The small school building – interior

3.13 Bldg.142: Air-Raid Shelter

Located behind the south-eastern side of No.1 Flight Shed is a monolithic cast-in-situ concrete air-raid shelter with straight sides and having a curved roof.
It is concealed by earth and turf and was almost completely hidden by brambles. It is accessed from a concrete baffle with steps down to the entrance without a door, and has an emergency-escape hatch at the western end (which is open). It is similar to those built at BAC Filton.
The walls have a brown-stained tide mark indicating that it is often flooded, although it was dry on the day of inspection.

- Dimensions: 5ft × 39ft (internal)
- NGR: ST 34066 59560

Plate 84: Air-Raid Shelter, (Bldg.142) – view looking towards the emergency exit

3.14 Bldg.147: Air-Raid Shelter / Plant House

Located just south of the Administration Block is a wartime-built air-raid shelter, although it is not shown on the 1942 plan (no air-raid shelters are shown). It consists of a small substantial brick-built windowless building with a concrete slab roof. The external walls are 13.5in and internal 9in thick. There is a single entrance protected by a blast wall that also has a concrete slab roof over.

It was originally divided into two equal halves, each one containing a pair of air-raid cubicles and an inner corridor with door access. The cubicle brickwork is independent of the exterior wall enabling it to be kicked out below a substantial concrete lintel.

This type of air-raid shelter was once a common site at BAC Filton, but most of these have been demolished. After WWII, the building was modified so that one half has had its cubicle dividing wall removed.
The building contained plant items including pipework and valve-gear manufactured by Westwood & Wrights, the patent number of which suggests that the equipment was associated with gas or air processing.

- Dimensions: each cubicle measures 10ft × 4ft 6in
- NGR: ST 33624 59408

Plate 85: The air raid shelter viewed from the first floor of the admin building

Plate 86: Plant equipment in Bldg.147

Appendix I – Building Schedule

Based on RAFM 1945/ 1952 Drawing, 2009 ARG Survey

See site plans on pages 20 & 21.

Bldg. No.	Description	Status (1952)	NGR (all ST)	Status July 2015
1	Hangar & Workshop Office	Western Airways Ltd	35180 60309	Extant
2	Hangar	Western Airways Ltd	35275 60339	Extant
3	Gas Defence Block	Unoccupied	35323 60362	Demolished
4	Decontamination Centre	Western Airways Ltd	35341 60354	Extant
5	Station Offices, Canteen & Officers' Mess	Western Airways & TDU det	35391 60398	Demolished
6	Chief Warden's Office	Unoccupied	Unknown	Demolished
7	Ambulance Shelter & Fire Tender Garage	Western Airways Ltd	35124 60309	Demolished
8	Unknown	N/A	N/A	N/A
9	Small Arms Ammunition Store	Unoccupied	35122 60293	Demolished
10	Maintenance Workshop	Western Airways Ltd	35142 60263	Extant
11	Air Ministry Works Department	AMWD	35160 60262	Extant
12	Boiler House	Western Airways Ltd	35158 60264	Extant
13	Gas Meter House	Western Airways Ltd	Unknown	Unknown
14	Incinerator	Western Airways Ltd	Unknown	Demolished
15	Clerk of Works Office & Store	AMWD	35215 60271	Extant
16	MT Garage (6 bays) with Dope Store	Western Airways Ltd	35224 60249	Extant
17	Fuel Compound	Western Airways Ltd	35217 60243	Extant
18	Pyro Store	Unoccupied	35292 60249	Extant
19	Barrack Blocks (2 off)	Western Airways Ltd	Unknown	Demolished
20	Stores	Western Airways Ltd	Unknown	Demolished
21	Ablutions Block	Unoccupied	Unknown	Demolished
22	Latrine Block	Unoccupied	Unknown	Demolished
23	Sewage Disposal Pump House	N/A	Unknown	Demolished
24	Barrack Blocks (3 off)	Western Airways Ltd	Unknown	Demolished
25	Cookhouse & Dining Room	Unoccupied	Unknown	Demolished
26	Guard Hut	Western Airways Ltd	Unknown	Demolished
27	Guard Barrack Hut	Unoccupied	Unknown	Demolished
28	Ablutions Block	Unoccupied	Unknown	Demolished
29	W/T Rest Hut	Unoccupied	35445 60350	Demolished
30	W/T Rest Hut	Unoccupied	Unknown	Demolished
31	Air-Raid Shelters (3 off)	Unoccupied	35380 60340 35300 60303 Unknown	Extant
32	Air-Raid Shelters (6 off)	Unoccupied	Unknown	Demolished
33	Petrol Installation	Western Airways Ltd	Unknown	Demolished
34	Air-Raid Shelters, Defence Site No.1	Unoccupied	Unknown	Demolished
35	First Aid Hut	Unoccupied	Unknown	35344 60368
36	Officers' Quarters	TDUI Attachment	35360 60370	35359 60370
37	Instructors and Crew Room	Western Airways Ltd	35235 60363	Extant

Bldg. No.	Description	Status (1952)	NGR (all ST)	Status July 2015
38	Administration Block	Western Airways Ltd	35231 60334	Extant
39	Crew Room	Western Airways Ltd	35238 60351	Demolished
40	Guard Room	Western Airways Ltd	35427 60361	Demolished?
41	Petrol Store	Western Airways Ltd	Unknown	Unknown
42	Canteen	Western Airways Ltd	35263 60313	Demolished
43	Armoury	Flying Control Officer	Unknown	Demolished
44	Boiler House, No.2 Flight Shed	MAP	34443 60632	Extant
45	Not Allocated	N/A	N/A	N/A
46	Pump House	N/A	33602 59544	Extant
47	Type FW3/24 Pillbox, Defence Site No.2	Unconfirmed / Not on Plan	3553 5993	Unknown
48	Type FW3/24 Pillbox, Defence Site No.2	Unconfirmed / Not on Plan	3543 5989	Unknown
49	Type FW3/22 Pillbox, Defence Site No.2	Unconfirmed / Not on Plan	3535 5983	Unknown
50	Type FW3/26 Pillbox, Defence Site No.2	Unoccupied	35251 60053	Extant
51	Type FW3/24 Pillbox, Defence Site No.1 (2 off)	Unoccupied	35473 60384 35454 60450	Both Extant
52	Petrol Store, No.2 Flight Shed	MAP	34495 60692	Extant
53	Flying Control	Unoccupied	35256 60549	Extant
54	Unknown Pillbox, Defence Site No.1	Unoccupied	35333 60503	Demolished
55	Fire Tender House	Unoccupied	34396 60550	Demolished
56	Pillbox, Defence Site No.1	Unoccupied	35266 60620	Extant
57	Air-Raid Shelter	Unoccupied	35281 60573	Demolished
58	Store Shed	TDU Detachment	35290 60548	Extant 2009
59	Dispersal Hut	TDU Detachment	35264 60536	Extant
60	Timber Hut (18ft × 54ft), Defence Site No.2	Unoccupied	Unknown	Demolished
61	Nissen Hut, Defence Site No.2	Unoccupied	Unknown	Demolished
62	Nissen Hut, Defence Site No.2	Unoccupied	Unknown	Demolished
63	Timber Hut (18ft × 54ft), Defence Site No.2	Unoccupied	Unknown	Demolished
64	Nissen Hut, Defence Site No.2	Unoccupied	Unknown	Demolished
65	Timber Hut (18ft × 54ft), Defence Site No.2	Unoccupied	Unknown	Demolished
66	Nissen Hut, Defence Site No.2	Unoccupied	Unknown	Demolished
67	Timber Hut (18ft × 54ft), Defence Site No.2	Unoccupied	Unknown	Demolished
68	Timber Hut (18ft × 54ft), Defence Site No.2	Unoccupied	Unknown	Demolished
69	Nissen Hut, Defence Site No.2	Unoccupied	Unknown	Demolished
70	Timber Hut (18ft × 54ft), Defence Site No.2	Unoccupied	Unknown	Demolished
71	Nissen Hut, Defence Site No.2	Unoccupied	Unknown	Demolished
72	Pump House	AMWD	35154 59852	Extant
73	Demolished	N/A	N/A	N/A
74	Nissen Hut, Defence Site No.3	Occupied at weekends by ATC	34688 59653	Demolished
75	Unknown Building, Defence Site No.3	Occupied at weekends by ATC	Unknown	Demolished
76	Nissen Hut, Defence Site No.3	Occupied at weekends by ATC	34675 59647	Extant
77	Type FW3/22 Pillbox, Defence Site No.3	Occupied at weekends by ATC	34674 59638	Extant
78	Police Box, Defence Site No.3	Western Airways Ltd	34692 59641	Extant

Bldg. No.	Description	Status (1952)	NGR (all ST)	Status July 2015
79	Unknown	N/A	N/A	N/A
80	Type FW3/22 Pillbox, Defence Site No.3	Site No.3 occupied at weekends by ATC	34694 59579	Extant
81	Office Block	BAC Factory	33948 59561	Demolished
82	Type FW3/24 Pillbox, Defence Site No.3	Site No.3 occupied at weekends by ATC	34746 59617	Extant
83	Pilots' Offices	BAC Factory	33838 59623	Demolished
84	Pilots' Block	BAC Factory	33885 59637	Demolished
85	No.1 Flight Shed / Shop 4	BAC Factory	34216 59628	Extant
85A	Paint Shop	BAC Factory	33987 59542	Extant
86	Fire Station	BAC Factory	33941 59571	Demolished
87	Dope Shop / Shop 6	BAC Factory	33884 59538	Extant
88	Power House	BAC Factory	33794 59517	Extant
89	Boiler House	BAC Factory	33804 59479	Extant
90	Garage	BAC Factory	33607 59520	Extant
91	Quarantine Store / Shop 7	BAC Factory	33708 59466	Extant
92	Admin Block	BAC Factory	33603 59448	Extant
93	Canteen	BAC Factory	33629 59324	Extant
94	No.2 Erecting Hall / Shop 8	BAC Factory	33762 59351	Extant
95	Hospital	BAC Factory	33902 59402	Extant
96	Type FW/24 Pillbox, Defence Site No.4	BAC Factory	34066 60426	Extant
96	Type FW/26 Pillbox, Defence Site No.4	BAC Factory	34434 60763	Extant
97	Labour Office	BAC Factory	33601 59171	Demolished
98	Recreation Hut	BAC Factory	33600 59190	Demolished
99	Planning Department	BAC Factory	33696 59253	Demolished
100	Stores & Print Room	BAC Factory	33670 59276	Demolished
101	Nissen Hut, Defence Site No.4	Unoccupied	34110 60456	Demolished
102	Stores (4 Nissen Huts)	BAC Factory	34185 59581 33922 59637 33699 59524 34187 59585	All Demolished
102	Sewage Pump House	Unknown	34178 59588	Extant
103	Armoury, Defence Site No.4	Unoccupied	34169 60454	Demolished
104	Type FW3/26 Pillbox, Defence Site No.4 (2 off)	Unoccupied	34169 60453 34358 60499	Extant Demolished
105	Police Box, Defence Site No.4	Unknown	34363 60514	Extant
106	Nissen Hut, Defence Site No.4	Unoccupied	34180 60454	Demolished
107	Timber Hut 18ft × 54ft, Defence Site No.4	Unoccupied	34156 60444	Demolished
108	Nissen Hut, Defence Site No.4	Unoccupied	Unknown	Demolished
109	Nissen Hut, Defence Site No.4	Unoccupied	Unknown	Demolished
110	Nissen Hut, Defence Site No.4	Unoccupied	Unknown	Demolished
111	Armoury	BAC Factory	Unknown	Demolished
112	No.2 Flight Shed (Hutton Moor)	BAC Factory	34409 60646	Extant
113	No.3 Flight Shed / Shop 3	BAC Factory	34014 59583	Extant

Bldg. No.	Description	Status (1952)	NGR (all ST)	Status July 2015
114A	Experimental & Modification Shop / Type A1 Hangar / Shop 5	BAC Factory	33915 59360	Extant
114B	Type Super Robin Hangar	BAC Factory	33922 59331	Extant
114C	Type B1 Hangar	BAC Factory	33975 59368	Extant
115	Spares Hangar / Type A1 Hangar / Shop 10	BAC Factory	33678 59614	Extant
116	Nissen Hut, Defence Site No.5	Unoccupied	Unknown	Demolished
117	Nissen Hut, Defence Site No.5	Unoccupied	Unknown	Demolished
118	Lavatory Blocks (2 off)	BAC Factory	33951 59398	Demolished
119	Police Box	Western Airways Police	35029 61002	Demolished
120	Nissen Hut, Defence Site No.5	Unoccupied	Unknown	Demolished
121	Nissen Hut, Defence Site No.5	Unoccupied	Unknown	Demolished
122	Police Box, Defence Site No.5	Unoccupied	Unknown	Unknown
123	Wind Sleeve		Unknown	Removed
124	Fire Tender Houses (2 off)	BAC Factory	34006 59678	Demolished
125	Shelter Trench Defence Site No.1	Unoccupied	35060 60941	Demolished
126	Type FW3/22 Pillbox, Defence Site No.5,	Unoccupied	35060 60957	Extant
126	Type FW3/22 Pillbox, Defence Site No.5,	Unoccupied	35110 60946	Extant
126	Type FW3/26 Pillbox, Defence Site No.5,	Unoccupied	35090 60910	Extant
127	Office Block	BAC Factory	33623 59462	Extant
128	Blister Hangar	Western Airways	35200 60228	Demolished
129	Blister Hangar	Unoccupied	35259 60150	Demolished
130	Aviation Petrol Installation	TDU Detachment	35262 60070	Some remains
131	Nissen Huts, West End Farm (2 off)	MAP	Unknown	Both Demolished
132	Pyrotechnic Store	BAC Factory	Unknown	Unknown
133	Bofors Gun Tower	Unoccupied	33681 60106	Demolished
134	Coal Dumps	Unoccupied	33773 59598	Demolished
135	Helicopter Design Office	Constructed c.1956	33774 59638	Extant
136	Romney Huts (4 off)	BAC Factory	33667 59686	Demolished
137	Prototype School Building (2 off)	Constructed c.1948	33598 59606 33595 59620	Extant
138	VHF Directional Finding Station	Constructed post-war	35500 60885	Extant
139	Old Compass Platform	N/A	35049 60259	Extant
140	Shop 12	Constructed c.1952	33870 59269	Extant
141	New Compass Platform	N/A	34327 59917	Demolished
142	Air Raid Shelter	Unoccupied	34066 59560	Extant
143	Bessonneau Hangar,	Air Training Corps	34718 59673	Demolished
144	Loading Bank 25ft wide for 8 rail trucks	Unknown	Unknown	Demolished
145	Platform 360ft long × 9ft wide	Unknown	Unknown	Demolished
146	Siding to hold ten 75ft-long coaches	Unknown	Unknown	Demolished
147	Air Raid Shelter / Plant House	Unknown	33624 59408	Extant
148	Sewage Pump House	Unknown	33961 59587	Extant

Appendix II – Principal Functions of Key Shops

No.3 Flight Shed Shop 3	No.1 Flight Shed Shop 4	Experimental & Modification Shop Shop 5	Dope Shop Shop 6	Quarantine Store Shop 7	No.2 Erecting Hall Shop 8	No.2 Flight Shed (Hutton Moor)	Spares Hangar Shop 10
Repairs and retrospective modifications	All aircraft from Oldmixon	Directorate of Technical Development mods	Paint and camouflage of all Oldmixon and Banwell aircraft	Beaufighter sub-assemblies store wartime	Beaufighter front fuselage production and assembly wartime	Beaufighters from Banwell site ATDU wartime	From 1943
	Alloy Bungalow floors 1945	Alloy School & Hospital production 1945-48		Alloy Bungalow wall panels 1945	Alloy Bungalow roof sections and assembly 1945	AIROH 1945	
					Henlys of Bristol Military vehicle maintenance 1948-65 (Jeeps, fire engines, Antars, DUKWs etc)		Became Tool Room date ?
	Andrew Brothers stainless steel fabrication 1950–52		Andrew Brothers stainless steel fabrication 1950–52				
Venom sub-contract 1952	Venom sub-contract 1952	Britannia tailplane & cabin floor 1952–58	Armament work Turrets & A gun refurb 1953	Britannia detail fittings 1952–58?			
Guided Weapons rocket motors 1953	Type 173 1956		XTV Project 1953	Armament work Turrets & A gun refurb & wiring looms assembly 1954			
Sycamore Flight Shed 1956	Helicopter Paint booth 1956	Type 192, 193 & Sycamore production line 1956–8	Aircraft component store 1954			EMI / EMI Thorn / Thales Defence 1958	
	Tandem-Rotor Development 1958						
	Type 192 Belvedere 1959	Type 192 assembly 1959					
	Sycamore, Belvederes, Whirlwinds 1962?	Whirlwind conversions 1964		Britannia tailplane and helicopter rotor blades 1964	Transmission overhaul 1966		
				BN Islander wings & fuselages Sea King structures 1968–72	Con Cargo glass fibre boat hulls 1972–82		Transmission Repair Centre 1974
			Gannet 3 overhaul 1974				
			Puma line, Scout refurbishment 1976	Gazelle line 1977–82?	Egyptian Air Force Mil 6&8 transmission overhaul 198?		
		Metal Rota Blade Facility 1977–83	Lynx rebuild 1977-81	WG30 rear fuselage production 1979			

No.3 Flight Shed Shop 3	No.1 Flight Shed Shop 4	Experimental & Modification Shop Shop 5	Dope Shop Shop 6	Quarantine Store Shop 7	No.2 Erecting Hall Shop 8	No.2 Flight Shed	Spares Hangar Shop 10
	RN Wasp conversion Lynx assembly (one aircraft only) 1981 ?	Central Hydraulic Facility 1983	Wessex 60 storage 1981 Gazelle line and repair 1982–84		Falklands Conflict Support (working 24/7) 1982 +		
Lynx maintenance, Nigerian Airforce training 1984–5	Test rig production 1985		Egyptian Air Force Commando refurbishment 1982–83	Puma roof and cabin manufacture 198?–88	Sea King rotor blade manufacture 1983 Lynx blade manufacture 1985		
Closed 1987	Closed 1987	BAe 146 doors, Jetstream 31 & 41 doors 1987 Puma overhaul and Lynx AH7 components 1991–7 Closed 2002	Closed 1987	Closed 1987	BAe 146 doors, Jetstream 31 & 41 doors 1987 Closed 2000	Closed 2004	Closed 1987

The table shows only the activities described with approximate dates in '*Weston-super-Mare and the Aeroplane'.*

The sheds lost their names and were numbered after WWII.

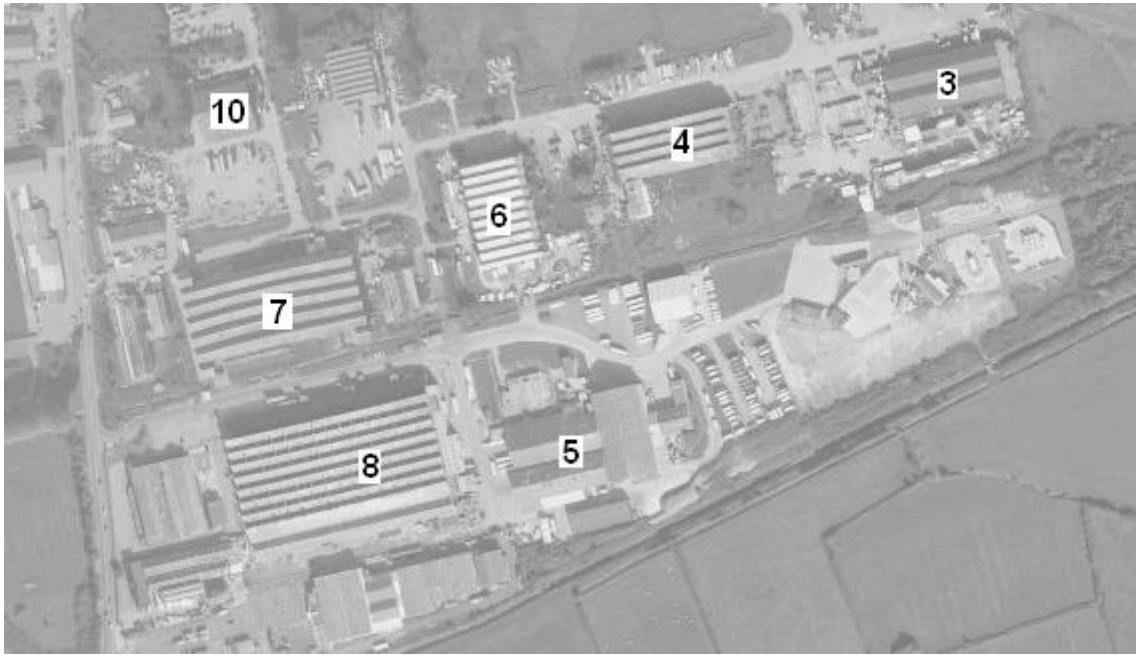
Note that the missing shop numbers relate to those at Elborough /Banwell:

Quarantine Store became Shop 1

No.1 Erecting Hall became Shop 2

The Garage became Shop 9

Part of the Admin block became Shop 11.



Right: The Oldmixon shop numbers

No.2 Flight Shed is one mile to the north at Hutton Moor

Appendix III – Locations of Barrage Balloon Sites

See Fig.1 on page 11.
Original grid references are War Office Cassini (WOFO) – vT xxx yyy.

No.	Location	Grid Ref.
55/1	In field adjoining west side of railway and north side of road (NW of Devil's Bridge).	766 794
55/2	In field on southern part of Devonshire Road, 200 yards south of Cross Rhyne Bridge. Site moved to improve access.	766 802
55/3	North-west corner of cricket ground on the east side of Devonshire Road (later to Uphill Road). Entrance in Devonshire Road.	763 805
55/4	In field on west side of lane to factory immediately north of the Rhyne and opposite main offices.	775 805
55/5	In football field adjoining and NW of Bournville School. Approach is via Bournville Road, Waverley Road and Selworth Road (cul-de-sac) then left at end. Site moved slightly east on Slimbridge Farm, Uphill.	769 812
55/6	On level portion of ground forming part of the local corporation ash tip at the SE end of the southern side of Gas Works Lane. Entrance through corrugated iron gate (painted black). Site moved to improve access.	774 815
55/7	On vacant land to the south of, and forming part of Gas Works property. Entrance is at end of Newlands Road.	768 819
55/8	On concrete adjoining and south of the Drill Hall. Approach via Bridge Road, turn left at end, along Langford Road, then turn right between Memorial Hall and HSP Wireless. The site was moved slightly south on land owned by Western Pottery Co.	774 823
55/9	In NW corner of field on the south side of Locking Road and the east side of Hutton Moor Lane. Site moved to conform to War Agricultural Committee request to field 170 yards north of original site.	782 818
55/10	In small field at fish pond between small white cottage and caravans. Site moved to improve access.	782 818
55/11	In a field on the east side of Locking Moor Road and south of the junction of Moor Lane Drove. Entrance in Moor Lane Drove opposite bungalow.	792 823
55/12	In field on the south side of Moor Lane Drove 250 yards south-west of the windmill.	798 826
55/13	On small portion of grass land on the north side of Locking Moor Road, 250 yards east of the entrance to RAF Locking. Site waterlogged so moved.	796 817
55/14	In field, 150 yards south of Locking Head Farm and east of RAF station. Entrance through Locking Head Farm. Site moved to field adjoining RAF Locking football ground and 170 yards south of original site.	804 871
55/15	In field adjoining and to the north of Locking Farm.	803 813
55/16	In field adjoining and to the south of West End Farm.	794 812
55/17	In field inside right-angle bend in the Hutton – Locking Road (300 yards south of Church Farm).	803 805
55/18	In field on the south side of main road, east of hut on village opposite house named '*Hillsborough'*. Site moved to conform to War Agricultural Committee request but in due course may have reverted to the original site.	797 799
55/19	On golf course 100 yards east of clubhouse, 250 yards ENE of small corrugated iron shelter and 700 yards east of hut.	787 791
55/20	On golf course 50 yards west of clubhouse.	787 791
55/21	In field on the south side of the main road, west of Hutton village, opposite a house named '*The Grange'*.	787 798
55/22	In field on south side of main road, 300 yards east of the junction of the lane leading to BA company's factory. Site moved to conform to War Agricultural Committee request.	774 797
55/23	In field on north side of main road, 250 yards west of junction of lane leading to factory. Site moved to conform to War Agricultural Committee request.	780 788
55/24	In small field 200 yards SW of '*Highcroft House'*. Approach via cul-de-sac adjacent to house called *'Heathgate'*.	780 789

Appendix IV – Sources

The National Archives, Kew

LAB 8/1747	Report of the Working Party on the Labour Position in Bristol and Weston-super-Mare, November 1951
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